WIRE
& WIRE PRODUCTS
OFFICIAL PUBLICATION OF THE WIRE ASSOCIATION

Forthcoming Features

Advertisers, Prospective Advertisers and Readers will have great interest in these articles soon to appear

WIRE MESH MANUFACTURE IN GERMANY

Weaving looms, printing and dyeing machines and equipment; output, labor required, other information. Machine manufacturers may get some hints from this.

WILL EXTRUSION SUPPLANT WIRE DRAWING?

Figures from recent surveys showing applications of extrusion to products now made from wire or from castings. Perhaps you should add an extrusion press to forestall competition?

COMBAT WIRES OF U. S. SIGNAL CORPS

Cross sections, qualities needed, preliminary specifications for Government necessity in war time that would absorb entire output on many large wire mills. This may mean a lot of future business to some firms.

PROPER HEAT CONTROL IN CABLE INSULATING

Ovens, melting pots, extrusion presses, gages, thermometers, other control instruments and method. Perhaps you need more and better control instruments?

ANNEALING, GALVANIZING, JAPANNING STRIP STEEL

Furnaces and other equipment used, gas, oil and other fuels, control methods and instruments, etc. Are you certain you are using the most economical fuel?

HISTORY AND DEVELOPMENT OF WIRE ROPE

Wire first known in Queen Shub-ad's time, 5,000 years ago, and its progress and development since. Future suggestions. Wise executives predict the future from lessons of the past.

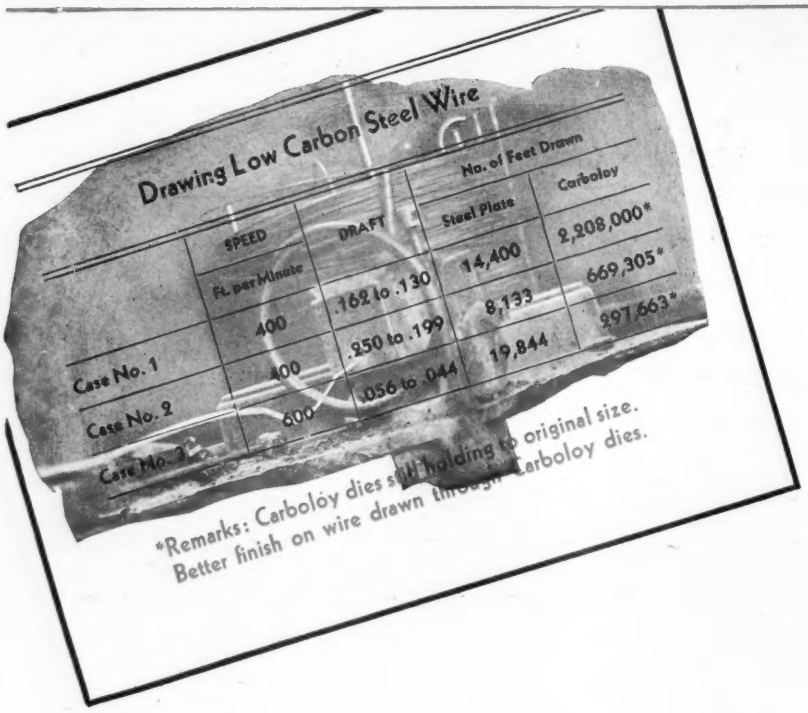
Wire and Wire Products

551 Fifth Avenue New York, N. Y.

October 1930

CARBOLOY Service

to the Wire Drawing Industry . . .



The use of Carboloy Dies in the wire drawing industry has resulted in lowered costs through greater tonnage and footage per set of dies, longer periods of uninterrupted production, and a smoother finish to the wire.

Thus, another important branch of American Industry has been effectively reached by Carboloy Service.

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Executive Offices: 6 East 45th Street, New York

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BRIDGEPORT, CHICAGO, CLEVELAND, DETROIT, INDIANAPOLIS, LOS ANGELES, NEWARK, PHILADELPHIA, PITTSBURGH.

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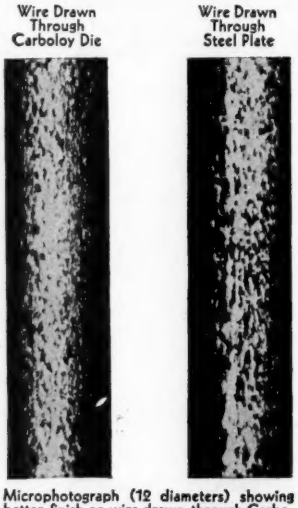
The Mark of CARBOLOY

Look for the mark of Carboloy:— if the mark is not on the product it is not a Carboloy cemented tungsten carbide product.

Speed Production with

CARBOLOY

TRADE MARK REG.

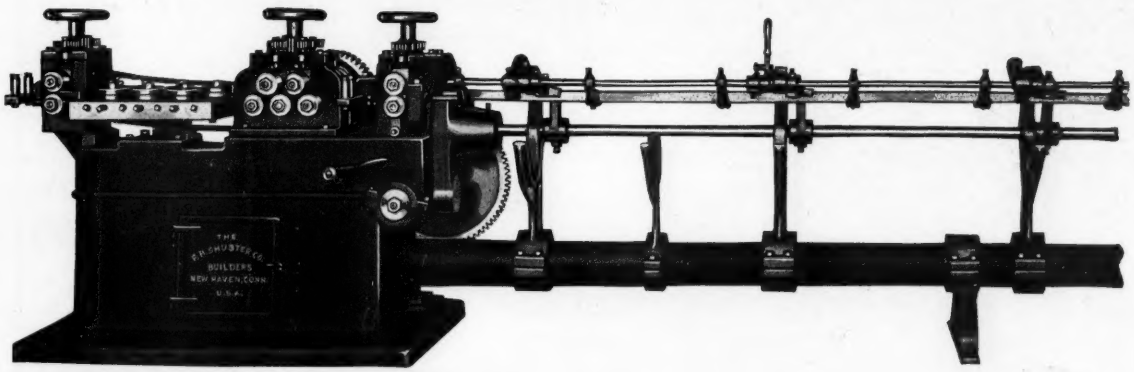


Microphotograph (12 diameters) showing better finish on wire drawn through Carboloy Die at large New Jersey mill. See page 10, Vol. II., No. 2, CARBOLOY.

WIRE & WIRE PRODUCTS, Vol. 5, No. 10, Oct., 1930. Executive office, 551 Fifth Avenue, New York, N. Y. Published by the Quinn-Brown Publishing Corp., Richard E. Brown, President; R. S. Spengel, Secretary and Treasurer. Publication office, 49 E. Washington Ave., Washington, N. J. Subscription price: U. S. and Canada, $5.00 per year, 50 cents per copy; Foreign, 7.50 per year. Entered as second class mail at the Post Office at Washington, N. J., under the Acts of March, 1879, and copyright, 1929, by Quinn-Brown Publishing Corporation.

STRAIGHTEN AND CUT YOUR FLAT WIRE

On SHUSTER Straightening and Cutting Machine



Takes it from the coil, straightens and cuts to accurate lengths at high speed.

This Machine is just as efficient as our ROUND WIRE Machines, and may be furnished to straighten flatwise only, or both flatwise and edgewise at one pass — either belt or motor driven.

Made in several sizes — send specifications and let us tell you what it will do for you.

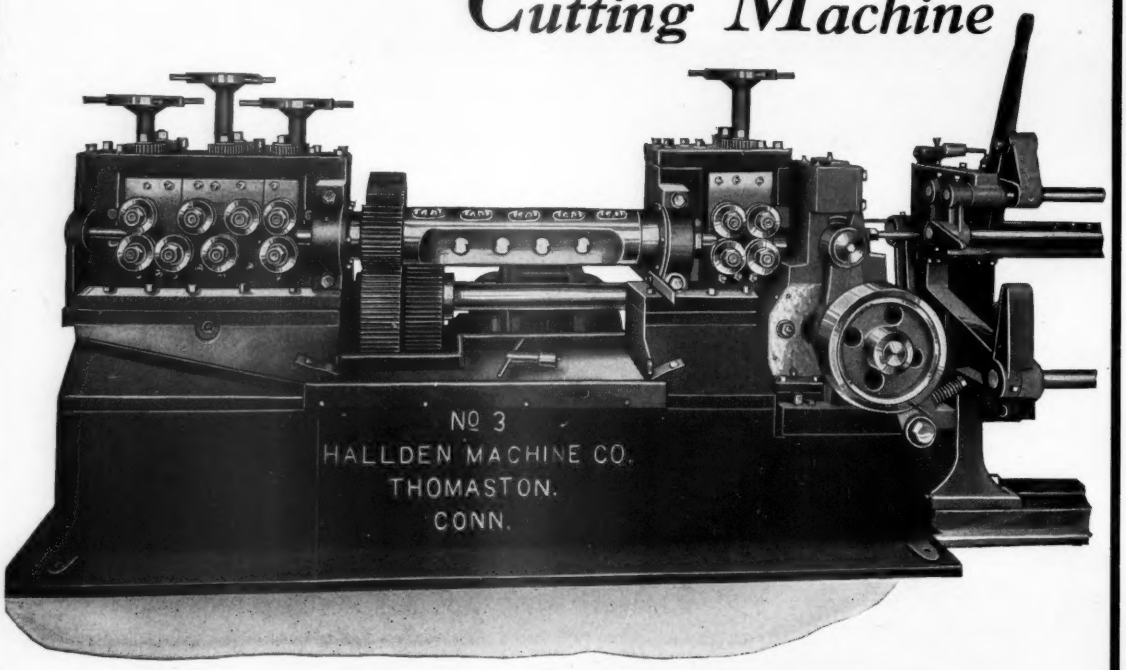
THE F. B. SHUSTER COMPANY

NEW HAVEN, CONN.

STRAIGHTENER SPECIALISTS SINCE 1866

Hallden

Flying Shear Automatic Wire Straightening and Cutting Machine



For handling all kinds of ferrous and non-ferrous wire. The wire does not stop while being cut off, thus producing an absolutely uniform diameter rod from end to end, free from markings or bulges. It is not necessary to stop the machine when starting or finishing a coil of wire, due to our specially designed straightening flyer. The rods are cut to accurate length at a speed of 100 feet per minute. Each size machine will handle a wide range of wire diameters. Rotary flyer made of .50 carbon machinery steel. All fast running parts mounted in heavy duty ball bearings.

Write for full particulars

The Hallden Machine Company
THOMASTON, CONN.

Mossberg Pressed Steel Reels and Spools *for Greatest Efficiency*

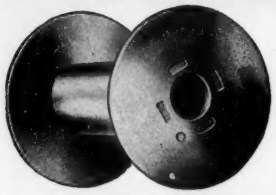


Fig. 1

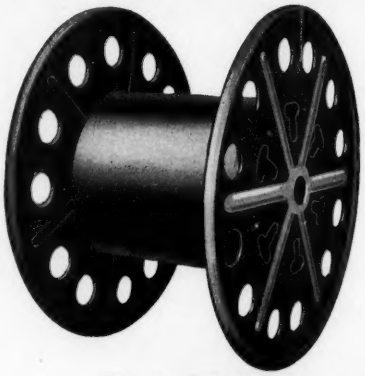


Fig. 2—Patented

THIS is no idle claim. They have given years of the most efficient service in many of the world's largest wire mills. Modern methods, backed by engineering skill and long experience, have developed and produced almost countless designs which are productive of manufacturing economies. Send for our Catalog 104, which lists many stock designs. Our engineering department will work with you in the development of special designs.

Figure 1. Flat-head spool for handling and annealing fine wire. Finished in copper or nickel plate.

Figure 2. Annealing reel which can be made up to fit practically any specifications. Many other designs are listed in our catalog.

Figure 3. Vulcanizing reel of maximum strength with minimum weight. From 36-inch to 84-inch diameter.

Fig. 3
Patented

Figure 4. Vulcanizing pan with cover. Arc welded and will retain its shape under the most severe conditions. Diameters up to 80-inch.

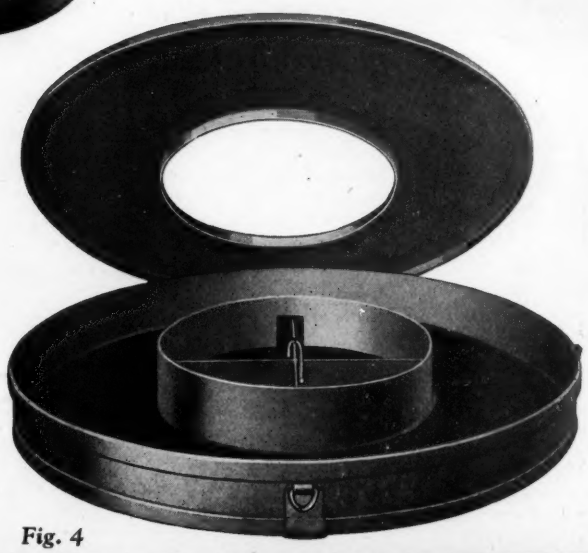


Fig. 4

MOSSBERG
PRESSED STEEL CORP.
Attleboro---Massachusetts---U. S. A.
Greenville, S. C. Dallas, Texas
Selson Engineering Co., Ltd., London, England

Union Diamond Dies

DIAMOND DIES
UWDC
UN-WIDIA DIES

The Union Wire Die Corporation was the pioneer in the use of round stone diamonds for dies.

Now, years later, other diamond die manufacturers are beginning to use round stone diamonds.

The patented setting in which Union Diamonds are secured takes full advantage of the round stone principle. The mere use of a round stone instead of a flat does not duplicate the Union Diamond Die.

The Union Wire Die Corporation shows its faith in these principles by making definite time guarantees against breakage in drawing brass and copper wire.

Because of their large purchasing power and their policy of maintaining large reserve stocks, The Union Wire Die Corporation has its choice of the best die diamonds offered in the European Markets. If market offerings are not up to their standards they are never forced, through hand to mouth buying methods, to accept the best the current market affords.

There must be good reasons when one concern so far outdistances all competitors. These reasons are a better product, better service and dependability of supply.

UNION WIRE DIE CORPORATION

NEW YORK

The Wire Association

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Be a Joiner and You Will Be In Good Company!

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Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.

During the past month many problems have been solved and many questions answered through the co-operation of members.

Why not Let the Wire Association Solve the Production Problem That Is Worrying YOU, Or Supply Needed Information.

Wire Men! This Is YOUR Association!

The annual dues for individual membership are only ten ($10.00) dollars.
Fill out the membership application blank below and send it in immediately

---

THE WIRE ASSOCIATION

The undersigned hereby applies for Active / Associate *membership in the Wire Association, and agrees to be governed by the Charter and By-Laws of the Society and to further its objects as laid down therein.*

Name .....

(*Firm, Organization or Individual applicant*)

Address .....

Nature of Business .....

If corporate membership, name and title of individual who will exercise membership privileges:

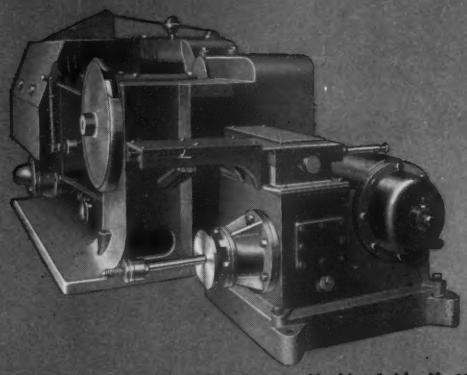
Name ..... *Title* .....

If personal membership, name or organization with which applicant is affiliated and official title or occupation:

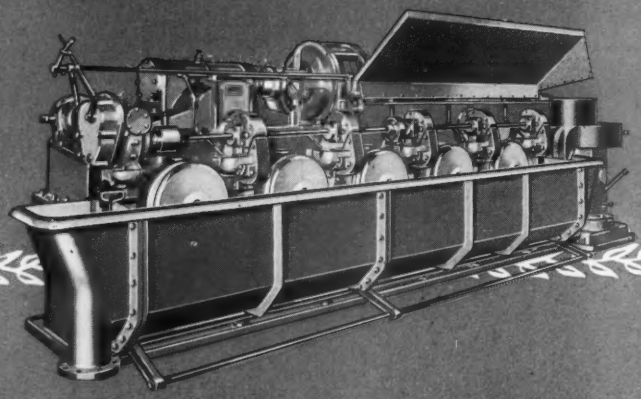
Name of Organization .....

Address of Organization .....

Applicant's Title or Occupation .....



No. 1—10 Die Continuous Copper Wire Drawing Machine, finishes No. 10 B. & S. gauge and smaller at 2000 Ft. P. M., overall dimensions 15' x 6'. (Patented)



6—Die Machine, finishes No. 2 B. & S. gauge, and smaller, at speeds of 500 to 1500 Ft. P. M., overall dimensions 19' x 7'. (Patent applied for)

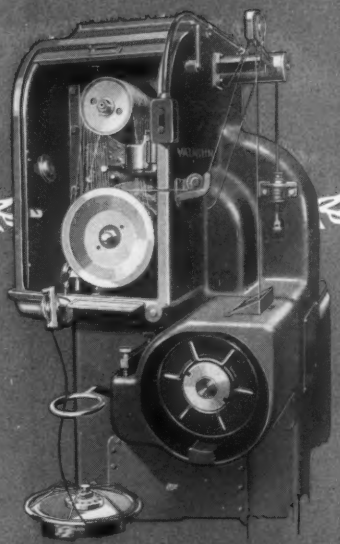
VAUGHN

Copper Wire Drawing MACHINERY

These three machines together with the No. 3 Copper Wire Drawing Machine are designed to produce all sizes of copper wire from No. 2 to No. 40 B. & S. gauge—and at higher speeds in less floorspace. They are the very latest development in copper wire drawing equipment.

The No. 1, No. 2 and No. 3 machines are manufactured under a license from the Western Electric Company, Inc., by which certain exclusive rights have been acquired.

THE VAUGHN MACHINERY COMPANY
CUYAHOGA FALLS, OHIO



No. 2—12 Die Continuous Copper Wire Drawing Machine, finishes No. 17 B. & S. Gauge, and smaller, at 2500 Ft. P. M., overall dimensions 6' x 3'. (Patented)

WIRE & WIRE PRODUCTS

A monthly publication devoted to the production of Wire & Wire Products in all metals from the bar to the finished wire product.

Vol. 5 October 1930 No. 10

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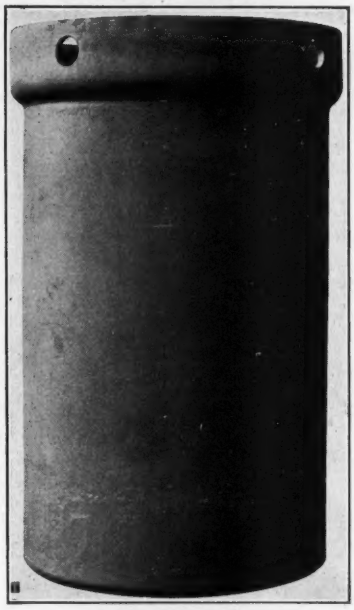
Official Publication of The Wire Association

Annealing Pots To Fit Your Needs

STANDARD FORGE FIRE-HAMMER WELDED

ANNEALING POTS

FOR ALL REQUIREMENTS



THESE POTS

can be furnished any practical size or shape. With either single or double bell offset at top and with or without lifting holes as shown.

The grade of steel entering into the construction of these pots is the result of more than thirty-five years experience.

We are specialists in

Annealing Pots
Lead Melting Pots
Salt Annealing Pots
Annealing Pans
Galvanizing Pots and Kettles

Columbiana Boiler Company
COLUMBIANA, OHIO

UN-WIDIA ALLOY DIES

A PROVEN PRODUCT

DIAMOND DIES
UWDC
UN-WIDIA DIES

Specialization makes for progress
We make dies exclusively

Un-Widia Alloy Dies are the result of the collaboration of the world's best known makers of special alloys, Fried Krupp Co., and America's largest wire and tube die manufacturers, the Union Wire Die Corporation, who have the exclusive right to sell Widia metal, for drawing purposes, in the United States, Canada, Mexico and France.

Un-Widia Dies
are now
made for shaped wire

THE KRUPP PRODUCT
Widia metal is made into dies
and sold exclusively in the
UNITED STATES, CANADA, MEXICO and FRANCE
BY

UNION WIRE DIE CORPORATION

NEW YORK

Paris Pittsburgh Hamilton

WIRE & WIRE PRODUCTS

A Monthly Publication Devoted to the Production of Wire and Wire Products in all Metals from the Bar to the Finished Wire Product.

Vol. 5 OCTOBER, 1930 No. 10

The Cost of Congested Aisle Space

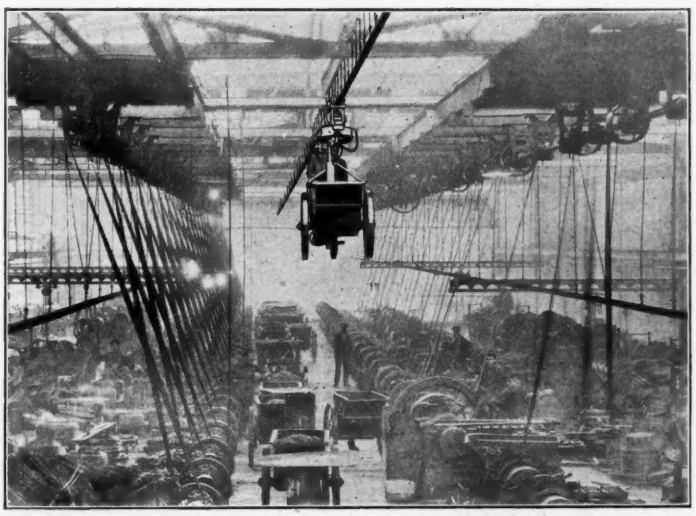
How This May Be Determined and Methods of Eliminating the Congestion and Cutting the Cost.

NO cost records reveal accurately the true cost of congestion in the movement of materials in wire mills. It is an important phase of production costs to which many wire mill operators are turning their attention at present in spite of smaller production schedules.

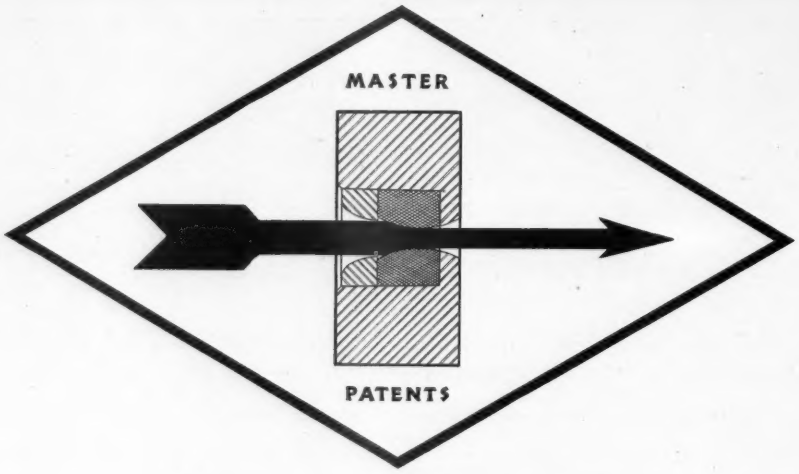
In most mills the wire-drawing department is most seriously affected by aisle congestion. In other mills it may be cleaning room, fence department, galvanizing department or the nail department; in many mills every department of the business is suffering seriously from congested aisle space that seems to affect production costs just as much under dull business conditions as under good business conditions.

Let us consider for an example the wire-drawing department where congested aisles are most commonly found and where the cost is most serious. It is the usual thing to find this department congested with buggies loaded with undrawn wire or rod and with finished wire ready for some other department that is not in shape to receive it. Scattered here and there about the place we find empty buggies that should be returned to the cleaning department or that have no reason for being in the wire department except that there is no other place to put them. The empty buggy occupies about as much floor space as a loaded one.

The Management puts the blame for the condition on the Superintendent, the Superintendent blames the Foreman and the Foreman blames the Tractor Crew, the Stockholders pay the bill and the matter usually rests until floor space is added. But the addition of floor space is not the answer to this problem. Several years ago a certain mill in the middle west added approximately 25% to the floor space of the wire-drawing room to elim-



Typical Wire Mill View, Showing Usual Congestion of Passageway.



Strauss Metal Tungsten-Carbide Dies

FOR

Wire, Rod and Tube Drawing

Sizes: .010″ to 1.000″

Eliminate Your Die Trouble
with

Master Patent Dies

Made by automatic machinery of special design eliminating the personal element in the manufacture of MASTER DIES. Exact duplicates of any die in any quantity desired are assured by this automatic production.

The product obtained through the use of these dies is beyond comparison. The price is beyond competition.

Master Special Dies for Tube and Rod Drawing

Sizes: .250″ to 3″

MASTER WIRE DIE CORPORATION

408 CONCORD AVE.,
NEW YORK ... N.Y.

inate aisle congestion and it wasn't 3 months after the addition was made until congestion was just as bad as before and the cost of congestion greater because greater distances had tc be covered in the movement of the material. There are probably many other mills that have added to their floor space with exactly the same object in mind and with exactly the same results.

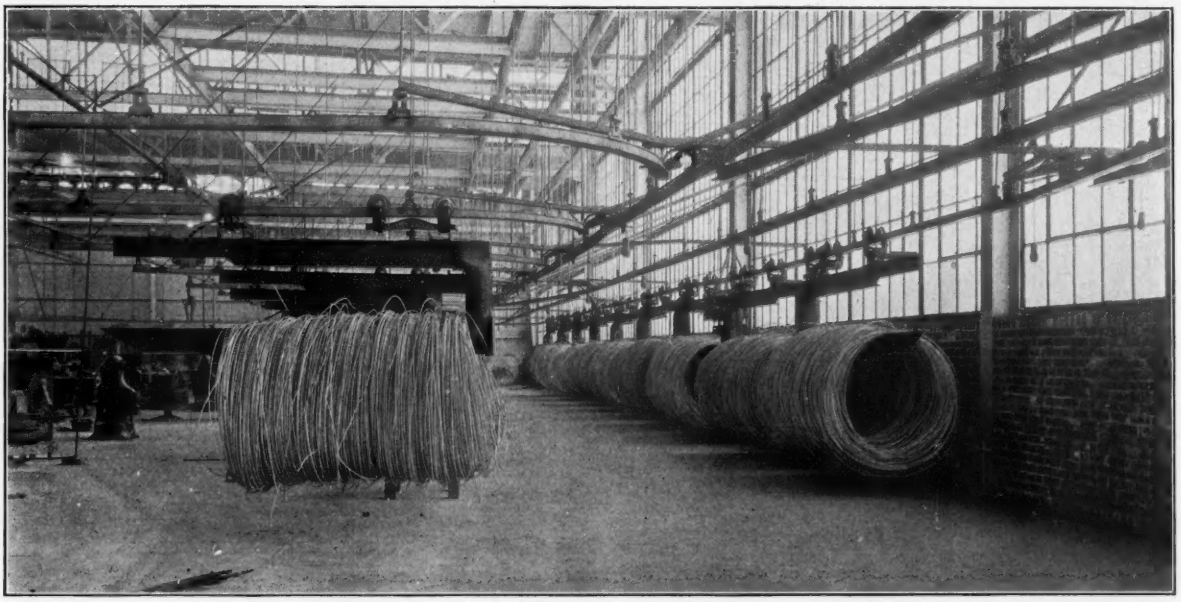
If a company auditor were asked to draw up a statement of the cost of congested aisle space, his figures would not include interest on the money invested several years ago in additional floor space to eliminate that congestion which was not eliminated and his figures would not include the cost of light, heat and additional power for this space, nor would they include the cost of rearranging machinery to provide larger aisles. Probably they would not include the non-productive time of the wire-drawing machines and operator that are invariably the direct result of congestion.

Most wire mills are applying power in some form or other to the movement of materials through the plant, a step in the right direction. There are many instances in which the application of power to the movement of materials in a wire mill adds to congestion rather than eliminates it and actually adds to the cost of it because of the greater investment involved.

Wire Mill Needs Much Storage Space

When the engineering department of any mill plans for the application of power to the movement of materials or the application of hand-propelled machinery of a more highly refined design a certain definite provision is always made for the storage of raw or unfinished material on wheels, another provided for the storage of finished material on wheels and enough space always provided for the movement of material without congestion and with reasonable provision for the fluctuation of the quantity of material in all of these places.

After spending weeks, months and even years in formulating a complete handling scheme so as to derive the greatest benefits from the plan as a whole, machinery may be selected of a type that "will go anywhere" with the result that when the machinery is placed in the hands of the operating department, changes in the plan are made here and there usually to meet the ideas of some particular individual and with only that individual's problem in mind and not the scheme as a whole (in mind). The result is that after a few changes of this kind are made, the entire plan is spoiled and congestion in the same old way and with the same old results makes its appearance.



Corner of Operating Floor of Wire Mill, Indicating How Overhead Cranes Handle Wire Rods and Leave Floor Space Open and Clear.

The application of overhead material-handling machinery has many advantages in any wire mill.

1. A well laid out plan once established must be followed by the operating department and at the same time if an error has been made in the engineering department, that error can be corrected at a nominal expense and "to a plan" so that the plan is always followed.

(*Please turn to page 403*)

British Insulated, A Great Cable Company

A Description of the Plant, Methods, Equipment and Products of a Famous British Wire Company

By A. C. Blackall

BRITISH Insulated Cables, Limited, which is one of the largest cable making companies in the world, has its principal works and head office at Prescot (Lancashire) and others at Helsby (Cheshire).

The Prescot works, about 7 miles from Liverpool, now occupies about 35 acres, chiefly covered with buildings, the result of a steady increase in business since the company's inception in 1891. The Company was the first to make paper insulated cable in Europe.

With copper and aluminum mills, wire-drawing and cable-making plant, and large departments for the production of every kind of cable accessories installed, the factory forms a complete vertical unit, nearly all its output being manufactured from the raw material. Its activities are by no means confined to cable making, although its principal output; it produces copper and aluminum sheets, rods wire, and sections, has its own iron and brass foundries, and makes an immense variety of cable accessories, electric resistance welders, fittings of every kind for overhead linework, etc.

Cables the Principal Output

The works are equipped with railway sidings, served by two tank locomotives, in addition to which extensive use is made of battery trucks for the transport of material between departments. These tractors are used for heavy loads, one being specially designed for a power-driven lifting device so that the operation can, without assistance, pick up and transport large drums of cable.

Paper cables and their accessories being the principal output of the Prescot works, it is interesting to follow the various courses of the work which practically commences with the mill where refinery takes pride of place and where electrolytic copper scrap from the various stages of wire drawing, stranding and other processes is baled in hydraulic presses and charged into oil-fired reverberatory furnaces where it is remelted, corrected with oxygen content, by means of poling or stirring with green timber, and then poured into moulds for use in the rolling mills or extruding shop. Only pure electrolytic copper is used in the factory, and the bulk of this comes from America and Australia, already cast into wire bars. The form of billet used in rolling is approximately square in section and pointed at the ends to facilitate its entry into the rolls of the mill. These

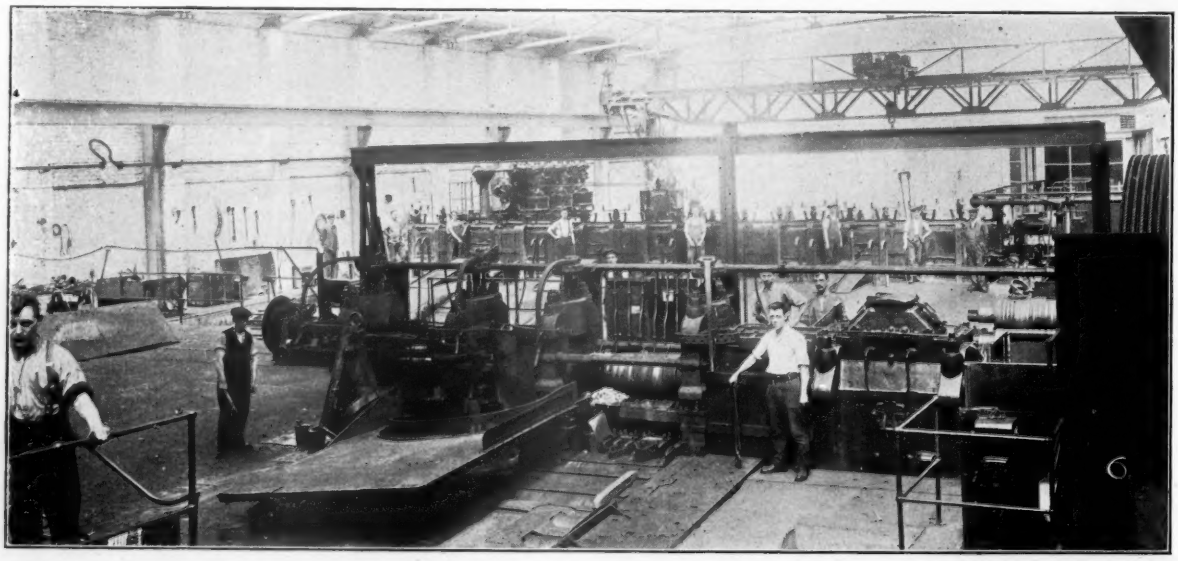


Fig. 1. No. 3 Rolling Mill of British Insulated Cables, Ltd., at Prescot, Showing Rolls and Drives.

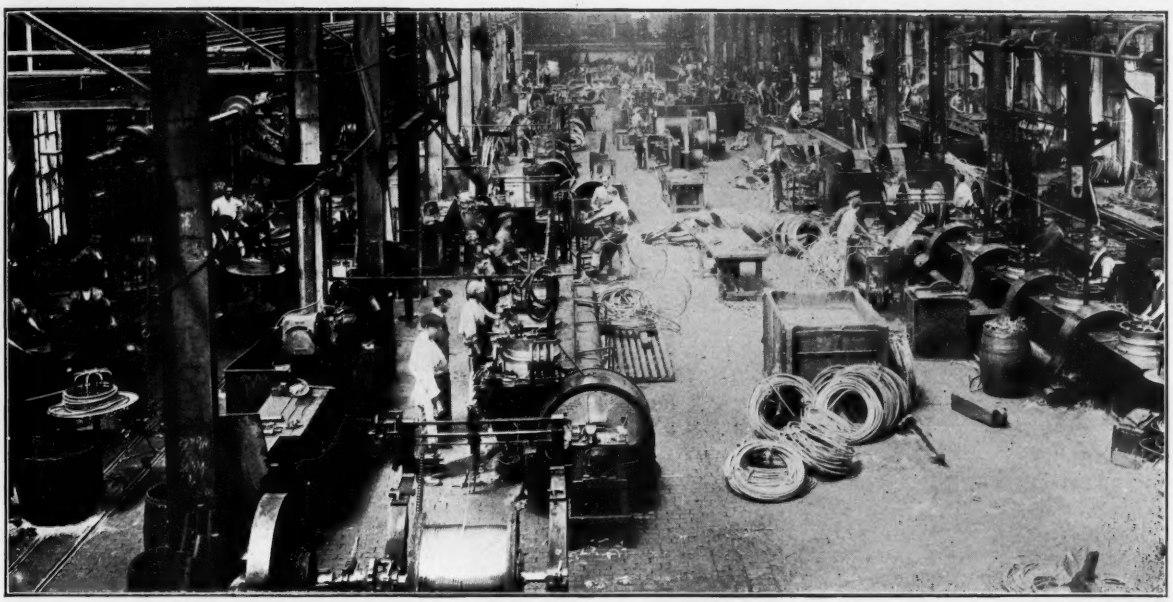


Fig. 2. Extruding Dept. of British Insulated, Showing Coilers Adjacent to Extruding Presses.

billets, technically known as electrolytic wire bars, are imported in this form and weigh approximately 150 lbs.; larger billets, known as trolley bars, being used for trolley wires and railway conductors, where long lengths of diameter are required.

Preparatory to rolling, the bars are heated in a reheating furnace to a bright red, and cooled first in a 3-high mill to a size suitable for the intermediate rolls. A couple of passes through the intermediate rolls, and the rod goes straight on to the finishing rolls, where it has a maximum of 8 passes and is reduced to what is technically known as black rod, usually ¼ in. diam. if intended for wire drawing, the whole operation being performed in one heat in about one minute's time. The rods are coiled on an automatic or semi-automatic winder and stacked on the floor to cool.

There are three rod mills at Prescot, Nos. 1 and 2, are old established, but No. 3, the largest, 210 ft. long by 70 ft. wide, is of the most modern continuous type complete with oil-fired re-heating surfaces, hydraulic charging machines, automatic bar-handling devices, repeaters for rolls, and automatic winding gear for the finished coils of rod. The mills are electrically driven with rope transmission, and have a combined output of 600 tons of copper rod per week. Aluminum is rolled in No. 2 mill.

Pickling the Black Wire Rod

The black rod is next pickled to remove rolling mill scale, the copper lost during pickling being recovered by electro-deposition, and after washing in a stream of water from a hose, it passes to the heavy-wire drawing shop, 140x156 ft., equipped with the latest heavy-wire drawing plant. Here it is drawn down on tandem automatic machines through 9 holes in one operation, usually to a diameter of .062 ins., soap and water being used as a lubricant. The chilled cast iron dies used in this operation are made at the works, and a special staff is constantly engaged in lapping and reaming out the holes as they become worn through use, and in preparing new dies to take the place of those which have been opened up to larger diameters.

After leaving the automatics the wire is annealed, and as at this stage it is undesirable to spoil its surface or lose any of the copper in annealing, this process is carried out in furnaces from which air is excluded, the wire passing in and out through a water seal, on a continuous chain carrier, and emerging clean and bright as it entered.

After leaving the annealing furnace, the wire, if it has not been drawn down to smaller gauges, goes to the copper stores, whence it is taken as required by the stranding department and rewound on bobbins ready for the stranding machines.

Small Sizes Drawn Through Diamonds

Wire required to be reduced to smaller sizes, etc., passes to another shop, and is drawn down through diamond dies. These, which are costly, are extremely enduring and retain in a high degree their accuracy, turning out large quantities of wire to gauge before they have to be lapped out again for larger sizes. There is in the wire mill a diamond drilling plant equipped with the most modern machines for the manufacture and maintenance of these dies.

Not all the copper wire from the rod mill is used in cable manufacture. Much is drawn to sizes suitable for silk, cotton,

(*Please turn to page 401*)

Suction Boxes on Fourdrinier Paper Machines

Cleaning the Wire and Caring for the Wire Cloth

By Clarence Beebe

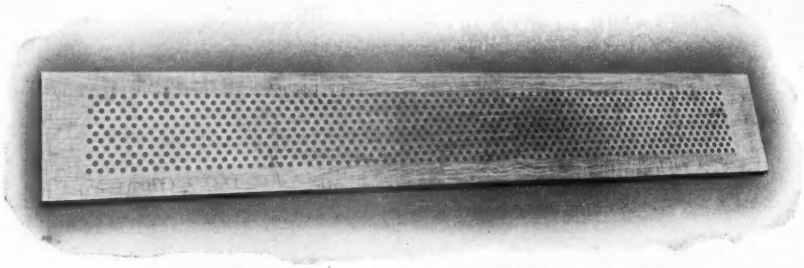
THE diameters of the open meshes in a wire cloth on a paper machine are of utmost interest when the amount of suction in the suction boxes is to be determined. These suction or vacuum boxes are three or more in number extended across the machine, and are required to relieve the wet pulp on the wire cloth of its water content. These boxes are about 8 in. square and the top covers of them are perforated. On modern wide machines they are deeper in cross section in order to give stiffness. The usual perforated covers are of maple wood in one piece, although some covers are made in sections. Rubber suction box covers have been tried but they do not seem to have been a success as they are more susceptible to friction from the running wire.

Until a few years ago, when the wide machines were developed, most of the suction boxes were made of cast brass but it was necessary to adopt a lighter and stiffer material for these new wide machines. If brass boxes were used it would be difficult to keep them from sagging in the middle and they would be hard to handle. Thus the boxes for the wide machines are now being made of built-up steel plates. These are light in weight yet stiff enough to prevent sagging in the center, and are much easier to handle. The indicating gauge on the machine attached to the suction pipe, will show the amount of vacuum prevailing at the moment. As it will show a 6, 8 or 10-in. vacuum, this will indicate the thinness or thickness of the pulp travelling over the wire, the thinner the sheet being made the lighter the amount of vacuum. In fact the density of the pulp coming over the wire determines the vacuum. If the suction is too high the pulp substance may be drawn through the wire meshes, and should be remedied at once by a lower suction.

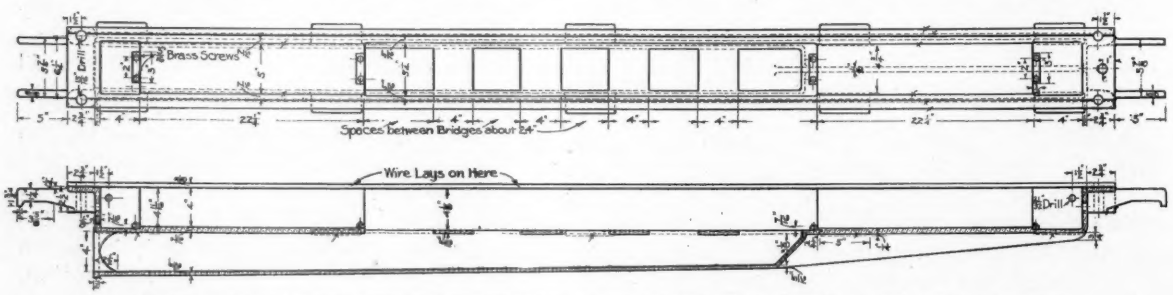
The wire cloth in its passage along the machine will score the box covers in parallel lines. These scorings will react on the wire and wear it out, especially at the seam. Only by means of a strong microscope may the reacting scoring on the very light threads of the seam be seen. To avoid these scorings an oscillating suction box has been devised and tried out quite successfully. The oscillation across the machine presents a new surface to the wire as it travels along the machine. It minimizes the scoring of the box covers in ridges and lengthens the life of the wire.

In 30 days the wire of a fast running machine is replaced by a new one. The occasion of the changing of the wire is taken

(*Please turn to page 400*)



Typical Wooden Cover for Fourdrinier Box, Used to Save the Wire.



Working Drawing of Bronze Water Box on Fourdrinier Machine, Showing Where the Wire Is Used and How Supported.

NEWS *of the* INDUSTRY

Foreign Trade Opportunities reported by the Bureau of Foreign and Domestic Commerce during the month of September include inquiries for wire or wire products from the following sources: Bolts and nuts (47244) Christchurch, New Zealand; automobile bolts and screws (47281) Oporto, Portugal; barbed wire and woven wire fencing with steel posts (47280) Rangoon, India; plain and barbed wire (47244) Christchurch, New Zealand; soldering material (47236) Vienna, Austria; barbed wire and wire nails (47404) Santo Domingo, Dominican Republic; phosphor bronze wire for fly screen weaving (47358) Melbourne, Australia; copper wire (47414) The Hague, Netherland; steel cables (47422) Milan, Italy; copper wire sheets and bars (47414) The Hague, Netherlands.

Latest Trade News From Germany

One of the features of the past month's German export trade in Wires is the circumstance that business in varnished wire has practically come to an end. There are no more orders for this sort of wire, probably as the difference in price between galvanized wire and varnished wire, which used to be 8-12 shillings has been reduced to 1-2 shillings. South Africa, Argentine, Uruguay and Chile do not buy such wire any more.

The newest alloy for wire production, especially aluminum wire and wire for wire ropes is beryllium. This is now produced to an extent of 1½ tons annually in Germany and after the American Austrian Beryllium Co., will supply sufficient quantities of beryllium of the Mines near Graz (Austria) the quantity will rise to 4-5 t., beryllium was priced $230.—per lb. 2 years ago and now at $88-90 per lb., and will be further reduced. As an 0.1—0.2% alloy of aluminum wire it increases the strength to 100,000 lbs., and added to high grade steel wire rope production (0.05 to 0.08%) the wire gives excellent results.

The number of works, which up to now have agreed to extend the German wire cartel, represent 78% of the total German capacity and it is probable that negotiations with works representing another 9-10% will lead to a satisfactory result, but still the outsider may be able to supply 10-12% of the total demand. The old cartel expires on Dec. 31st.

The latest census gives the number of hexagonal wire netting makers in Germany as 16, of square netting makers as 208, of wire nail manufacturers 69, of wire rope and strand wire manufacturers 47 and of all other wire makers as 226. The number of existing works shows a constant decrease since 1925. The number of German wire machinery manufacturers is 17, of which 9 specialize on the production of wire machinery only and the remainder produce other machines.

The latest prices on the wire export market were as follows: Barbed wire BWG 12 £ 9.8, wire nails, basis £ 6.3 bright wire same price, galvanized wire £ 7.7.6 per ton fob. A further reduction of prices is anticipated. Wire netting is now sold at 87½%—87¾% discount off the British Standard list fob.

According to an estimate 87% of all wires produced in Germany in 1927 were made by the wet-drawing process and in 1929 81%, in this year approx. 80%, so that the dry-drawing process is gaining slightly.

The continental makers of barbed wire are trying to issue uniform standard lists for reels of wood and wire. At present each maker is producing different types of reels of different weight, which has an influence on the gross weight and therefore the sea freights. It is of interest, that the Overseas markets are more and more specifying wire reels which are lighter and more useful.

Almost 70% of all wire rods exported from Belgium and Germany to the United States are of 5/16, ⅜ and 7/16 in., but more than 90% of all rods exported to other countries are of ¼ in. diam.

The German wire mesh industry has sharply reduced its prices for wire mesh of all qualities, which is explained by the circumstance that on the American market very keen competition is in full swing, so that American prices have been reduced by 20-25% since the beginning of this year. A roll of 50x2 ft. soft mesh green of 12 mesh size is now selling at sh. 4/9 and of hard quality at sh. 5/9—6. A further reduction may take place.

Germany exported during the first half of this year only 170.-817 tons of wire and 26.003 tons of wire nails valued 38,485,000*M* (1929 54,346,000*M*) and for nails 5,471,000*M* (1929 6,992,-000M). Last year the quantity was 272,673 for wires and 32,-134 tons for nails. A summary of all European countries shows that exports of all wire and wire products this first half year fell short of last year by approximately 195,000 tons. It is hoped that the figure may improve in the second half, but the prices are still going back and in the first week of September have reached the following figures: wire nails basis £ 6.4.0, bright wire £ 6.3.0, barbed wire £ 10.0 and in some cases even £ 9.18.0 American barbed wire corresponding to 12½ BWG (Waukegan pattern as sold in Latin America) £ 10.5, galvanized wire L 7.15.0 and annealed wire £ 6.13.0. The circumstance

that the wire rod cartel has broken down actually (all price control has been given up) and has permitted free competition in Belgium and France has greatly reduced the prices for wire rods and the export prices may be reduced again.

The Dutch wire nail industry has stopped operations, except one works. The Dutch industry finds itself unable to compete against imports, and has asked the Minister of Customs for an advance of the import duties.

Prosperous British Companies

Few industrial companies can point to a more prosperous record in the past ten years than British Insulated Cables, Limited. Ten years ago it was paying 15% on an ordinary issued capital of £1,000,000 ($5,000,000). Since then its fortunate shareholders have received two bonuses, 33 1/3%, and 25% in ordinary shares, and a bonus of 37½% in Preference shares, but they are nevertheless to receive a dividend at the same rate as 10 years ago. The ordinary share bonus of 25% and the preference share bonus were made last year, and as a result there is an additional preference dividend of £27,500 ($137,500) to be paid for 1929, and an extra £50,000 ($250,000) is required to maintain the dividend on the ordinary capital.

Net earnings, however, increased by a sum nearly equal to these amounts—namely, £68,000 ($340,000), and after deducting preference dividends and £100,000 ($500,000) appropriated for depreciation, the remaining profit represents over 28½ per cent on the ordinary capital of £1,666,666 ($8,333,330). The directors state that there was an increase in turnover during the year. It is not surprising to find that they "regard the result as satisfactory."

Besides setting aside a further £198,333 ($991,665) to reserve out of profits, a dividend equalization account of £300,000 ($1,500,000) is created out of sums provided out of revenue for taxation, but not now required.

COMING EVENTS

Oct. 1-11. 6th International Exhibition of Inventions, Central Hall, Westminster, S W, London. Sec'y., G. Drury Coleman, 39 Victoria St., Westminster, London, S W 1.

Oct. 13-15. National Machine Tool Builders Ass'n. 29th Annual Convention, Hotel Aspinwall, Lenox, Mass. Ernest F. DuBrul, general manager, 617 Vine Street, Cincinnati, O.

Oct. 13-15. District meeting, Amer. Inst. of Elec. Engs., Phila., Pa.

Dec. 1-6. 51st Annual Meeting, Amer. Soc. Mech. Engs., Engineering Societies Bldg., West 39th St., New York. Sec'y., Calvin W. Rice.

The financial strength of the company is clearly shown by the balance sheet. Good-will and patents have been written off entirely, and floating assets amount to £3,686,000 ($18,430,000), while current liabilities are no more than £880,000 ($4,400,000). In spite of the withdrawal of £833,333 ($4,166,665) in payment of the ordinary and preference share bonuses, the reserves, including the newly formed equalization account, stand at £1,200,000 ($6,000,000) and in addition a balance of £280,807 ($1,404,035) is carried forward.

Brief Personal Mention

C. H. Armstrong, at one time director of trade extension of the Textile Bag Manufacturers Association has been appointed general manager of the Clegg Lock Washer Co., Chicago. He will have complete charge of production, marketing and administration.

—

Richard L. Foster, who has been assistant general manager of sales of the American Steel & Wire Co., with headquarters in New York, has resigned to become general manager of sales of the Wickwire Spencer Steel Corporation and its subsidiaries, the American Wire Fabrics Corporation and the Wickwire Spencer Sales Corporation. Mr. Foster has been connected with the wire business since 1901. In 1921, when the Pearson business was merged with that of the American Steel & Wire Co., Mr. Foster was appointed manager of the merchant sales department at New York, and in 1922 he was made assistant general manager of sales of that company in charge of the Eastern territory.

—

O. C. Steinert, formerly chief engineer of Pittsburgh Steel Co., Pittsburgh, has become affiliated with the engineering force of Blaw-Knox Co., Blaw-Knox, Pa. His main effort will be in the development of equipment for steel plants.

—

Marcus A. Grossmann, chief assistant to F. J. Griffiths, president of the Republic Research Co., research subsidiary of the Republic Steel Corp. has been presented with the degree of Doctor of Science by Harvard University, following work in studying the quality and behavior of special steels. In collaboration with E. C. Bain, Grossmann has written a book on high speed steels, which is now on the press.

—

Fred C. Young has been appointed general manager of sales of the Union Drawn Steel Co., subsidiary of the Republic Steel Corp. Young has been with the Union for 16 years including 4 years at the Detroit district office and 9 at the Cleveland district office. In August 1928 he became assistant general manager of sales of the company. Young will succeed George Mitchell who has resigned as vice president in charge of sales, Union Drawn Steel Co.

—

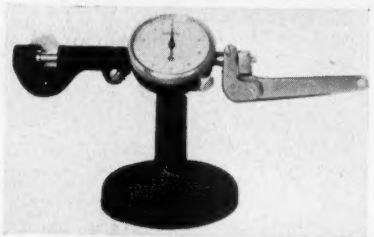
Ernest E. Thum, for 3 years associate editor of *The Iron Age,* New York, has resigned to become editorial director of *Metal Progress,* making its initial appearance Sept. 1, published by Amer. Soc. for Steel Treating, Cleveland. After graduating as a metallurgical engineer from Colorado school of mines, Mr. Thum became field engineer, Anaconda Copper Mining Co., later chief civil engineer, International Smelting Co.

New Machinery and Equipment

Description of Recently Developed New Tools of Interest to the Wire Industry

Hyro Automatic Industrial Furnace

DESIGNED for efficient case hardening work, this outfit embodies a pot furnace and a quenching tank joined by a sealed passageway and both covered by hoods in which Pyrex glass windows are provided for observation. There is also a basket into which the work to be hardened or heat treated is fed with a scoop, and a carrier, operated by an outside handle, that moves the work from heating pot to quenching tank. Quenching tank is equipped with a baffle to separate different kinds and sizes of work or to break up large lots of small work. In addition a perforated tray is provided for draining and removing the finished parts, this being, and is arranged to swing over the dump by means of an outside operating handle, into and through a hopper, below which a metal basket or other container can be arranged to receive these parts. The latter is outside of the main enclosed unit. At the top an exhaust blower is an integral part, and mixes cold air from quenching tank with hot fumes from furnace, with a fan designed to draw all fumes yet conserve valuable hardening elements of the cyanide. Furnaces are constructed right and left so a pair may be arranged to discharge into the same hopper. There is an automatic mixing device, suitable doors, proper instruments and all other necessary equipment to permit a complete thorough job with the one unit. Made by the Hyro Mfg. Co., Varick St., New York, N. Y.



The Federal Bench-type Wire Gage.

Federal Bench Indicating Gage

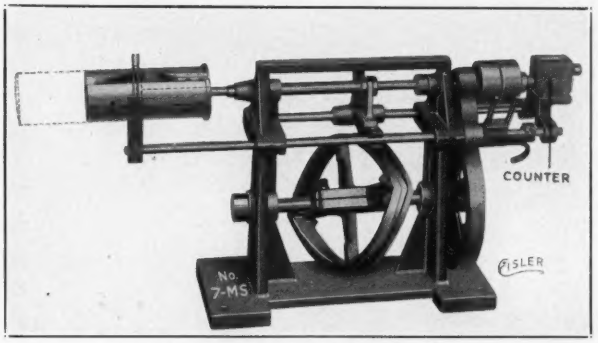
A NEW gage for measuring small wire arranged for an accuracy greater than 0.0001 in., has been produced by the Federal Products Corp., Providence, R. I. This is designated as model 341. It is of the bench type with a lever arrangement on the right side so that it may be operated by hand or by foot as desired.

The indicator has 0.0001 inc., graduations, and each large numeral on the dial represents 0.001 in. and can be swiveled on the bracket to suit the position and vision of the operator. The frame and anvil-carrying block are finished in black, all other exposed parts are chromium plated. As shown the anvil through which the wire is drawn for measuring is at the left and back of this is a small metal guide so arranged that the wire will always be in the center of the anvils. This makes for extreme accuracy in measurement.

In using the instrument the operator pulls the lever down, this opens the anvils. Then draws the wire through and takes readings on desired point.

Eisler Wire Winding Machine

A new type movable spooling machine is presented by the Eisler Electric Corp., Newark, N. J. This is said to have a distinct advantage over other types in that the spool itself moves back and forth while the guide remains fixed. The advantage of this is most apparant on coated wire in that there is no tendency for the guides to scrape off the coating.



Eisler Movable Spooling Machine.

The length of movement of the spool depends on cam motion and can be readily made to suit requirement from 1 to 4 ins. The machine is equipped with

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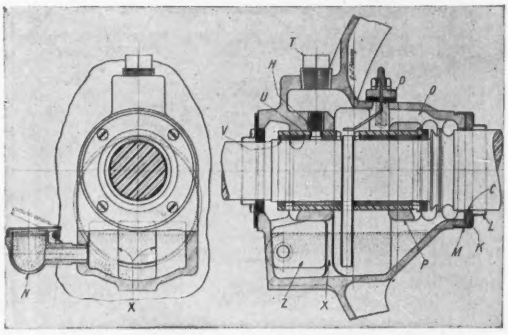


Cross Section of Westinghous Sealed-Sleeve Motor.

Wire Association Comes Into Being

What Was Said and Done at Buffalo Meeting—Committee Meeting

(*Continued from page 360*)

MR. W. F. KNOLL, (British Empire Steel Corp., Ltd., Canada): Mr. Chairman, I want to ask whether Canada will be represented in this association. I happen to be American born, and a citizen of the United States. I am now living in Canada and have lived there for the past 10 years and I do know the feeling of the Canadians. I believe you ought to have some representation in Canada. I wish to propose the name of Ross McMaster, who is president of the Steel Co. of Canada.

CHAIRMAN BROWN: Yes, Canada will be represented. We'll be glad to take Mr. McMaster's name.

MR. LEWIS. Why not page Jack Mordica and get him to serve?

CHAIRMAN BROWN: Is Mr. Mordica of the Bethlehem Steel Co. here? Oh, there you are. Will you serve on that committee?

MR. JOHN MORDICA, (Superintendent, Bethlehem Steel Co., Sparrows Point, Md.): I should be very glad to serve.

MR. LEWIS: Mr. Brown, why doesn't George Paff come in on this?

CHAIRMAN BROWN: Will you serve, Mr. Paff?

MR. PAFF: Guess so, yes.

CHAIRMAN BROWN: That gives us Mr. Crapo, Mr. Poole, Mr. Kempton, Mr. Mordica, Mr. Paff, Mr. Wilkins and Mr. Pierson.

MR. LEWIS: Mr. Brown, can I shoot another suggestion in? Mr. Hussey is not only a practical wire mill man now but is president of this association under whose auspices we are meeting. I should think it would be a darn good idea if he would get into this too.

CHAIRMAN BROWN: Mr. Hussey, will you give us a hand on this thing?

MR. HUSSEY: I think I can.

CHAIRMAN BROWN: I wonder if you gentlemen who will serve on the committee will stay for 5 minutes after the others leave. It's getting late. Let's go on to the next speaker, Clarence S. Arms. Mr. Arms is a well known consulting engineer on wire drawing and forming equipment, and is associated with Sleeper & Hartley, Inc., Worcester, Mass. He speaks with real authority and will give very interesting information on his subject. Mr. Arms read his paper which was submitted to Mr. Brown. (Applause).

CHAIRMAN BROWN: Are there any questions? Is Mr. Arkema here?

MR. H. P. ARKEMA, (Western Electric Co.): Yes, I'm here.

CHAIRMAN BROWN: Will you serve on that committee?

MR. ARKEMA: Yes, thank you.

CHAIRMAN BROWN: I see we have very few non-ferrous people here and if any of you can suggest a name we shall be glad to have him on the committee.

MEMBER: I suggest Mr. Bassett of American Brass.

CHAIRMAN BROWN: What are his initials?

MEMBER: I don't really know but I saw him here yesterday.

MR. HUSSEY: I believe his name is Raymond D. Bassett of the American Brass Co., at Waterbury, Conn.

CHAIRMAN BROWN: We'll ask him to represent the non-ferrous companies. The next speaker and the final paper in the meeting is in connection with the film "Monel Metal and Its Uses".

CHAIRMAN BROWN: This concludes our first wire meeting and I hope that we will have many more of them. Thank you, gentlemen, for your co-operation in coming.

Now the members whose names were called as being on the committee, please stay for a few minutes.

The meeting adjourned at 1:35 p. m.

Committee Meeting

The first meeting of the committee of the proposed Wire Association convened at 1:45 p. m. Chairman Richard E. Brown, presiding.

The members present were as follows: E. W. Kempton, American Steel & Wire Co.; F. A. Wilkins, of Wickwire Bros., Cortland, N. Y.; E. J. Poole, The Carpenter Steel Co., Reading, Pa.; E. P. Jacob, Republic Steel Co., Central Alloy Div., Canton, O.; John Mordica, Bethlehem Steel Co., Sparrows Point, Md.; R. M. Hussey, Jones & Laughlin Steel Co., Pittsburgh, Pa.; W. D. Pierson, Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.; Fred M. Crapo, Indiana Steel & Wire Co., Muncie, Ind.; W. F. Knoll, British Empire Steel Corp., Ltd., Can.; George Paff, Wheeling Steel Corp., Portsmouth, O., and R. E. Brown, "Wire & Wire Products".

CHAIRMAN BROWN: I think the thing for me to do is to sit back and let you fellows work out your own salvation. Here is what I can do. We'll put the entire facilities of "Wire & Wire Products" at your disposal. We'll do all the correspondence that is necessary and handle all the details in order to get the thing started. We'll be very glad to do it because we think the industry needs it.

I have this thought in mind.

I think we ought to get two or three men to represent the non-ferrous side and also to have a couple on the precious metal side. I further think we ought to confine this to the technical, production, and engineering side of wire. I don't think we want any selling at all. We want the production problems.

Now that's my idea. This should be something similar to what the American Water Works Assn. has. We can have our sectional meetings and one general meeting during the year which will have a show in connection with it. If we decide to function as a wire division of this particular Association, the manufacturers can still function in the same way and invite the others as their guests. That is the way I'd handle that. Our particular problem is to get the committee to go and exchange ideas on production. One gives his ideas and the other fellow exchanges his.

Mr. Hussey, what suggestion can you make?

MR. HUSSEY: Well, I had what I term a "basic" idea and that would be to carry it along as a division, a separate division, a distinct division, of the Ass'n. of Iron & Steel Electrical Engineers. Naturally I am thinking along that line because I have been connected with the Association for several years and it has developed into a rather strong association that has made very good connections in all of the steel industrial centers and it can help keep down our overhead. It can also help manage an exposition and we would probably get more men into the organization than otherwise—that is, than if we were set up as a separate organization of our own, without any affiliation whatsoever.

I have in mind the way the Combustion Engineers' section has grown and developed as a part of that same Association and I am very keen and strong for a setup of that kind. I think we'd be making a mistake if we didn't affiliate, for some years at least, with a going association such as the Iron & Steel Electrical Engineers is proving to be.

CHAIRMAN BROWN: That is something the committee members will themselves decide. What I'm interested in is getting the wire industry to have a meeting place.

Mr. Crapo, what do you suggest?

MR. CRAPO: I thing Mr. Hussey's suggestion is a very good one and has a number of advantages. This association can meet when there is an exposition. It's a good time for this particular section to meet and it gives us some stability to be tied to a going organization such as the Iron & Steel Engineers. I think it is better affiiliated with this Association than, say, the American Society of Mechanical Engineers.

CHAIRMAN BROWN: You may run into this difficulty. We, of course, are speaking from the standpoint of the steel men. You have the non-ferrous men to consider. You have perhaps as many wire drawing plants, brass, copper, and non-ferrous metals as in any other industry.

MR. CRAPO: On the other hand, they are just as closely related to the Iron & Steel Associatiaon as any other.

CHAIRMAN BROWN: I have already taken it up with Mr. Kelly. I have an appointment to talk it over with him Saturday. I didn't know any committee would be appointed. If you gentlemen want me to go ahead and do that—get a plan with Kelly and submit it to you people, I think it could be done and it would be a good thing to do.

SEVERAL MEMBERS: Yes, you do it.

CHAIRMAN BROWN: Now we can work out a plan and send it to the various members of the committee for their suggestions or comments. We won't go into this thing too far today. Suppose we do this: Suppose I get in touch with Mr. Kelly Saturday and we'll formulate a plan where we will be associated for the annual meeting and exhibition with that Association. When that is done we'll send each member of this committee a copy of the plan. I'll take it up with Kelly after all your suggestions and comments are back at my office, and we'll submit a final plan to each individual member of the committee. At that time we can decide by mail what we want to do. We'll use "Wire & Wire Products" as a clearing house along that line.

MR. ARKEMA: Is there any other association with which we can affiliate?

(*Please turn to page 392*)

Industrial Electric Truck with Special Brakes for Handling Reclaimed Lead, Western Elec. Co's. plant. Photo courtesy Electric Storage Battery Co., Phila.

Sleeper & Hartley TRADE MARK

"GOOD BUSINESS" HAS

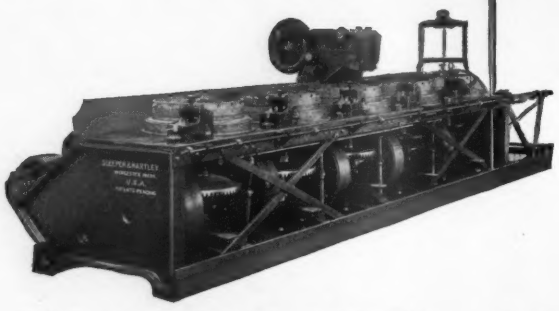
THE present business depression cannot co
men already note a brighter trend for this

When business does pick up, the wire w
prompt deliveries. His conditions can only be
mill equipped with modern machines.

SLEEPER & HARTLEY CONTINUOUS
are in the forefront of modern design and can
mum daily output at a minimum production co

May we suggest, Mr. Wire Mill Superintendent
and determine where you can advantageously
such as are described herewith, against future

Continuous Rod Frame



(Patented June 3, 1924—May 12, 1925—Others pending)

Capacity—No. 5 rods to No. 14—15 wire.

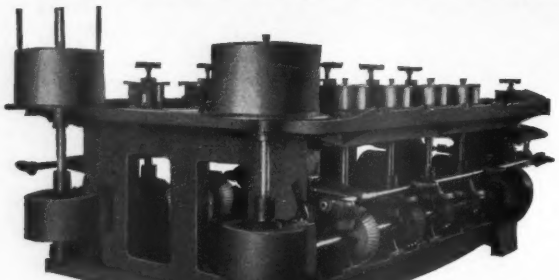
Automatic Compensation for Speed of Heads.

Ball or Roller Bearings used Throughout.

No Differential Gearing Whatever.

Made with 3, 4 or 5 Blocks as Desired.

Double 5-Draft Dry, Intermediate

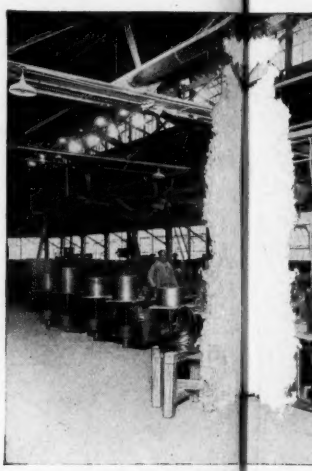


Capacity—No. 14 to No. 23, high or low carbon wire.

Average Operator handles 3 to 4 blocks.

Daily Runs—No. 14-19 wire (4 hole), 1400 lbs. per Block.
No. 14-20 wire (5 hole), 1100 lbs. per Block.

More than 550 heads of this improved model in continual operation



Battery of Double Six-Draft Dry
Drawing High Carbon Wire
The Thompson Wire Co., W

Capacity—No. 16 to No. high
Average Operator cares for
Daily Runs:—400 lbs. carbon
300 lbs. high carb

Direct driven with silent chain gears bearings. Variable for

American Agents

NEW YORK TERRITORY—Triplex Machine Tool Co.
PHILADELPHIA TERRITORY—Swind Machinery Co.
CHICAGO TERRITORY—Neff, Kohlbusch & Bissell, Inc.
SAN FRANCISCO—L. G. Henes Machine Tool Division of Jenison Machinery Co.
LOS ANGELES—L. G. Henes Machinery Co.

SLEEPER & HA

WORCESTER, MAS

IA ALWAYS COME BACK

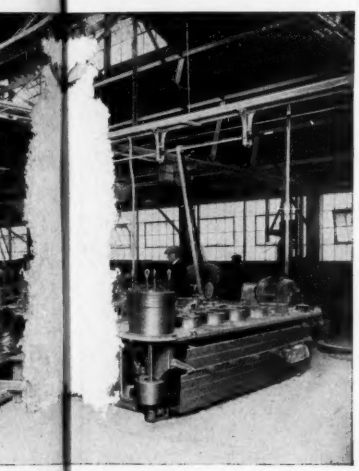
Sleeper & Hartley TRADE MARK REG. U.S. PAT. OFF. & PRINCIPAL FOREIGN COUNTRIES

sion ca ot continue indefinitely. Some wire mill
r trend r this barometric industry.

o, the er will be demanding low prices and
ns can ly be met in full by the up-to-date wire
chines.

CONT OUS WIRE DRAWING MACHINES
desig d can be depended upon to give a maxi-
m pro ion cost.

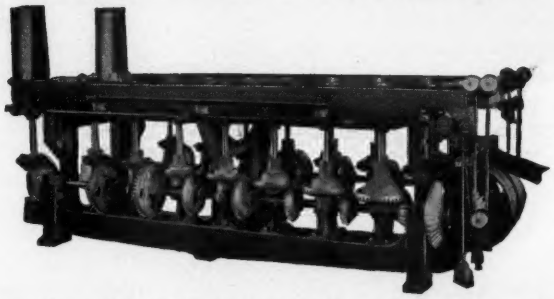
Mill S rintendent, that you look over your plant
advan ously place Sleeper & Hartley machines,
agai uture demands?



Six-Dt Dry Continuous Machines
gh-Ca Wire in the Plant of
on W Co., Worcester, Mass.

6 to N, high or low carbon wire.
cane f blocks (two machines).
0C lbs carbon wire in 10 hours.
CC lbs carbon wire in 10 hours.
nt c ast ears throughout. Anti-friction
Va ble for finishing block.

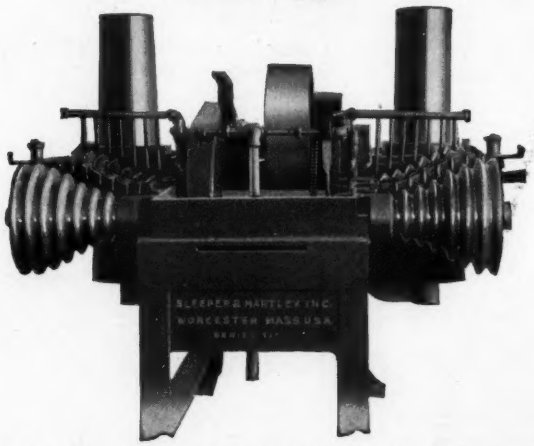
Double 8-Draft Wet, Fine Wire



Capacity—No. 22 to No. 36, high or low carbon wire.
Average Operator handles six blocks.
Daily Runs—No. 22-33 wire (8 holes) 660 lbs. of wire per 10-hour working day.

We have manufactured several thousand of these heads for Wire Mills throughout the country

Improved Double 8-Draft Wet, Cone Type



Capacity—No. 13 to No. 24, high or low carbon, or the finer woven screen wires.

Average Operator runs 6 to 12 machines, producing up to 1500 pounds of wire per day.

Machines staunchly built in six or eight drafts. Cones travel at 135 R. P. M., and draw 283 feet of wire per minute. Floor space —5′ 6″ by 4′ 6″.

HARTLEY, INC.
STER MASS., U. S. A.

Foreign Agents

UNITED KINGDOM—Mr. Fredk. A. Perry, 63 Queen Victoria St., London, E. C. 4
MONTREAL AND TORONTO—Arthur Jackson Machine Tool Co.
AUSTRALIA AND NEW ZEALAND—Edwin Wood Pty. Ltd., Melbourne
JAPAN—Andrews & George Co., Tokyo

No Rejects

Personalities and Gossip of the Wire Industry as Told by a Roving "Trouble Shooter"

THE brains of the wire business are always in our own mill. When we consider the lack of real industry and ability the other fellow displays, we wonder how he can make a living. Like the setting hen on china eggs we nurse our vanities, while one of the dumbbells takes several strides ahead. Even then when he manages to keep going, contrary to our hopes and prophecies, we continue to insist he is all wet. It seldon if ever interests us that one of the dullards may have by a circuitous method achieved as great a degree of perfection as ourselves. The very laboriouness of the attempt may have sharpened the tyro's wits and have taught him many things en route, things we have overlooked.

Stainless is a case in point. Everyone in the east, more or less, has tried it. Three do it successfully, make wire and some profit. They approached the problem conscious of their ignorance as far as the subject in hand was concerned. They had no preconceived notions, they were not opinionated but they had a certain genius for observation and addition. The two plus two rule had always stood them in good stead. Being simple souls they did not abandon one of their time honored props. By the Edisonian method, the process of elimination, hit, miss and try again method they have succeeded.

We who have tried it unsuccessfully, when we learn of their findings somehow cannot get over being human, for we have been heard to exclaim, "Oh yes, we tried that but it's no go." There you are and what have you!

No matter how great our record of accomplishment has been in the past it might not be a bad idea to remember that success of all the conditions of life is the most atrophying. Our hides become thick and sometimes our brains lose their keenness.

Slogans as a rule are tiresome things. The smaller the man the more generally is he addicted to slogans. However when our native guardians fail in their jobs, when we become satisfied with the comfortable feeling engendered by a substantial balance, an artificial prop, wooden leg if you will in the form of a slogan may save us from the fall awaiting us. Here's your prop. "The Amateur Always Invents". All records show that it is the man without previous history in the successful accomplishment of special work, who has blundered in and developed something worthwhile. The specialist, the old hand at the game, is too aware of the don'ts and can'ts of his job. He too easily reaches an impasse. For over a hundred years music on keyboards had reached an impasse until some one not impressed by the can'ts and must nots of his teachers tried the simple expedient of using the thumbs also. What a world of beauty that simple soul brought to us by being dumb but courageous.

Now here in all industry, to my knowledge, has custom such a grip as it has in wire. For what other job has the size and heft of a man been unchanged as a qualification for more than a century?

But, we do have rough amateurish spirits, even in the wire game, men who won't be downed by history and who will either lose their jobs, break their firms or achieve something. You are apt to find this sort in the most unexpected nooks. Some are sound, others not exactly so, at least from my very hardheaded observation of them but, they all play their part in development.

"See" of the La Salle Steel Company at Hammond, Indiana, is whole hog. Nothing is sacred to him. He is a radical among radicals, the Karl Marx living 60 years before the revolution. Hill of Northwestern Barb Wire at Sterling, Illinois, while of an entirely different sort and with some history to entice him has done many things that just can't be done and does them economically and very profitably.

Then there is that gang of "History is all Bunk" enthusiasts out at the Chicago Extruded Metals Co., in Al Capone's district. The four horsemen of extrusion, Henley, Anderson, Miller and Rohr, all wet and all wrong but managing to draw their pay now the same as last year. I tell you there must be a virtue in being considered wrong by your competitor, because those who as a rule are, appear to be better fed.

The Reynolds Wire Co., at Dixon, Illinois, seems to get along well, one might even say more than moderately so, but we won't. Guiding its destinies and keeping the favorable balances increasing is a rank outsider, a man who until not more than six years ago knew no more about wire than that it was good for hanging pictures. Bennett has brought to his job there all the zest of the novice, the acumen of the Yankee and the determination to keep more than abreast.

Port Huron, Michigan, has added the American Enamel Magnet Wire Co., to its already promising group of progressive firms. Only competitors have knowledge of the ominous meaning of the expansion by this firm at the production helm of

(*Please turn to page 398*)

Domestic Exports and Imports of Wire and Wire Products

Exports of iron and steel wire and wire products from the United States in June and July, 1930

(In gross tons)

Items	July 1930	June 1930	July 1929	Year through July 1930	Year through July 1929
Wire rods	2,266	4,479	5,823	28,117	28,883
Plain wire	1,815	1,877	3,591	17,398	29,718
Barbed wire and woven wire fencing	3,552	4,790	5,695	26,184	41,383
Woven wire screen cloth	161	144	125	1,626	1,027
Wire rope	294	450	736	3,014	4,657
Insulated wire and cable	23	17	56	349	650
Other wire and manufactures	640	624	1,258	4,976	7,017
Wire nails	844	625	962	4,660	8,634
Nails other than wire	402	437	1,352	3,549	5,644
Tacks	31	47	71	287	1,414
Bolts, nuts, rivets, except track	821	783	1,232	6,846	9,359

Imports of iron and steel wire and wire products into the United States

(In gross tons)

Items	July 1930	June 1930	July 1929	Year through July 1930	Year through July 1929
Wire rods	485	955	1,242	6,182	9,838
Barbed wire	388	368	577	2,733	3,542
Round iron and steel wire	272	428	490	3,117	3,765
Steel telegraph & telephone wire	5	1		24	
Flat wire and strip steel	52	96	137	792	1,240
Wire rope and strand	179	340	247	1,623	1,511
Other wire	17	34	17	206	366
Nails, tacks and staples	611	716	800	2,928	5,544
Bolts, nuts, rivets and washers	9	23	29	244	165

Imports cover June 1-17 only.

DURING July iron and steel exports continued to decrease and reached the lowest figure since February 1925. July represents a decrease of 17.3 compared with June 1930. In the face of this general decrease plain wire held up almost equal to the previous month while woven wire screen cloth, insulated wire and cable, other wire, wire nails and bolts, nuts and rivets exceeded June.

Imports decreased also but went lower in proportion, reaching the lowest level since November 1924. Barbed wire showed a modest increase while hoops and bands showed a considerable increase over June 1930.

Imports of card clothing rose to 14,802 square feet, valued at $25,384, the United Kingdom supplying 12,825 square feet ($20,783), with the remainder coming from Germany and Switzerland. Imports of wire cloth and screening rose to 27,819 square feet—8,148 square feet coming from Germany, 6,879 square feet from Canada, 5,720 square feet from Czechoslovakia, and lesser amounts from France, the United Kingdom, and the Netherlands. The trade in wire heddles rose to 2,215,000 pieces, 1,818,000 pieces originating in France, 363,000 pieces in Czechoslovakia, and 34,000 pieces in Germany. Wood-screw receipts totaled 14,551 gross, valued at $1,282, Sweden supplying 14,550 gross, valued at $1,276.

National Harris Wire Co., Inc., has acquired the Earl Mfg. Co., Chicago, which will manufacture and distribute their products throughout the middle west. A. J. Benson has been appointed plant supervisor.

The Waterbury Wire Die Co.

Diamond, Composition and CHILLED IRON DIES
Waterbury, Conn.

Speed Your Output

With KESTER Flux-Core solders you do a perfect soldering job at half the cost whether it be for production or maintenance. You can finish two jobs in the time you now spend on one. The flux right in the core saves materials, time and labor required in separate applications.

There is a specific KESTER solder for every industrial soldering need. The complete line includes 48,000 flux-core solders in addition to many bar and wire forms. Our Research Laboratory will help you solve your soldering problems—without obligation. Samples FREE upon request. Insist on KESTER.

Kester Solder Company

4246 WRIGHTWOOD AVE.
CHICAGO

Incorporated 1899

KESTER FLUX-CORE SOLDER

AMERICAN PRESSED STEEL REELS

PRACTICALLY INDESTRUCTIBLE
STANDARD TYPES 2½ IN. TO 8 FT.
SPECIAL TYPES MADE TO ORDER
WRITE FOR CATALOG

THE AMERICAN PULLEY CO.
PRESSED STEEL
PULLEYS HANGERS HAND TRUCKS
MISCELLANEOUS STAMPINGS
4200 Wissahickon Ave., Phila., Pa.

Continuous Comtorgages
for Insulated Wire and Cable

A new continuous gage for use in controlling the diameter in the production of insulated wire and cable. The product is accurately controlled to specified diameter, avoiding rejections and economizing material.

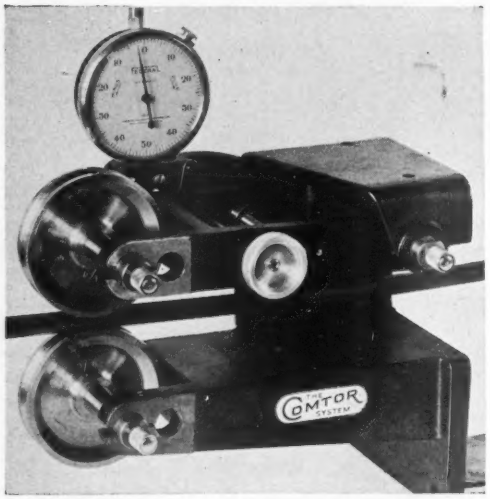


Fig. 15:—Comtorgage—W—Size 1.

The cable passes from the insulating machine through Comtorgage between the floating rolls, which continuously gage the size and show the exact diameter in thousandths inch, on the large indicator dial.

With an eye on the dial and a hand on the control lever, the operator regulates the insulating machine to produce continuously the exact specified diameter of insulated wire or cable.

The 90° grooves in the gaging rolls contact with the insulated wire or cable with constant uniform pressure at four contact points equally spaced around the circumference. As a result the dial shows the true average diameter, even if the wire or cable be slightly oval or out of round.

THE COMTOR COMPANY
WALTHAM, MASS.

Association Comes Into Being

(*Continued from page 387*)

CHAIRMAN BROWN: Yes. As a matter of fact, I have had two other associations approach me with the idea of forming a wire division affiliated with them. They may be closer to the wire industry than this association, however—I might as well be frank—I was told by two or three wire men, about the biggest in the country, to go slow because they figured the Iron & Steel Engineers weren't live enough. I think the Association has done a good job for us. I think this is just as good a bet as any because all the steel and non-ferrous people come in contact with the wire mill plants and work more or less with them on electrical installations. We have a contact here that we haven't in any other association and it has that decided advantage.

MR. ARKEMA: I'm wondering if we wouldn't fare just as well under another association as this one.

CHAIRMAN BROWN: Oh yes, you could fare just as well. As a matter of fact I originated this idea and carried this thing all the way through. "Wire & Wire Products" assumed the whole thing in order to get it done. We never figured we were going to get as good a start as we did. Now as to the expense, after the Association gets going, you'll find if you can get a good number of wire mill men to organize a meeting of this kind, that the manufacturers will bear the expenses of a good exhibit section and meeting because you are their customers and its well worth their while to get their customers at one central point at least once a year. One of the Wire Sections exhibitors told me that he had sold enough material at this show to pay for his entire exhibit. Another exhibitor made seven new contracts on the first 1½ days of the show. If they can do that right off, we ought to be able to develop this plan along broad lines.

What do you think about this, Mr. Poole?

MR. POOLE: I have no opinion to express as to which association we should affiliate with. That is immaterial to me because after this association is formed it will decide itself where it wants to go and as this has been started under the auspices of the Iron & Steel Electrical Engineers, there is no reason why we shouldn't proceed with them until the association makes its choice.

I am vitally interested in the informal talks that might be held away from the convention. We ought to have not five or six papers, but only one and the rest of the time devoted to the technical cases which members encounter, and the technical phases of the job. I am very frank in saying, that if you let the sales end get in you're going to defeat the very purpose for which this association will exist. We are not afraid of each other, no matter how much our sales force may say we are, but when you get together with the sales end, they'll talk turkey. If they don't care to do it they'll say so. However, the main thing is to get a general discussion which will help others.

CHAIRMAN BROWN: You can parallel the American Institute of Architects who have local chapters. They hold meetings once a month. You can have your main annual meeting where everybody can get together and you can also have your state meetings where you can get together for lunch and the talks could be taken down there, if they were not prepared talks, and we'll publish them in our magazine. In other words, we'll make ourselves an official organ for the association. This will help matters along.

MR. POOLE: Mr. Chairman, I move that you and such others as you may select, be empowered to draw up some rules and regulations or plan of procedure and submit it to the committee.

SEVERAL MEMBERS: Second the motion.

BALLOFFET

The Quality Diamond Dies

1870

1930

Our sixty years experience,
The quality of our stones,
Our special steel setting,
The output of our French Plants,
The large stock we are carrying,
Enable us to take care of the most particular requirements.

Balloffet Diamond Wire Dies Co., Inc.

13-15 East 22nd St., New York City

PLANTS AT

New York Lagnieu (France) Cluses (France) Trevoux (France)

Steel reels

last longer

Constructed of corrosion resisting materials, three to four times the life of a wooden reel is a reasonable expectancy. The cost of a "Red Head" Reel is less than twice the cost of a wooden reel.

reduce freight

Appreciably lighter than wooden reels, "Red Head" Reels cost less to Ship—a cumulative saving that more than offsets increased first cost.

reduce investment

The longer life of "Red Head" Reels reduces the investment in reel equipment.

reduce repairs

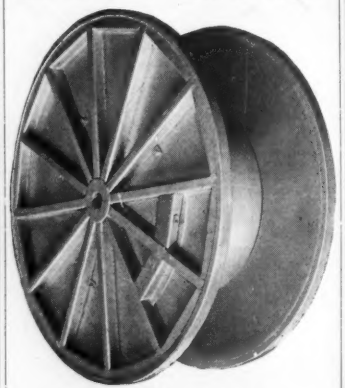
Service records show that wooden reels require frequent repairs and rebuilding. With "Red Head" Reels such repairs have been radically reduced.

increase protection

Smooth inner surfaces: Much greater strength with the absence of all cutting or abrading projections—these protect not only the cable but the men handling it.

Copy of results of comparative tests will be furnished upon request.

Red Head



Manufactured and Sold by

R. B. HAYWARD COMPANY

1714-1736 SheffieldAve.,Chicago and Graybar Bldg., New York

Under license arrangement with Electrical Research Products, Inc. Subsidiary of Western Electric Company, Incorporated.

CHAIRMAN BROWN: Mr. Knoll, you represent Canada, will you come in on that and help with the correspondence?

MR. KNOLL: I'll be glad to. What will I have to do?

CHAIRMAN BROWN: Well the correspondence that will come to you will have to be studied and of course, that will take time. You'll have the plan to study also and have to make your suggestions.

MR. POOLE: I think if you are the official organ of the industry, one operating man and the manufacturers would be all that's needed.

CHAIRMAN BROWN: Well, we've got to have some one from the non-ferrous side. When we get this thing going we'll find that we'll have to have a representative from the non-ferrous side and the precious metals, too. The first draft of anything of this kind is very unsatisfactory and is going to be shot full of holes. It will probably take us 2 to 3 months to get the thing shaped up and get the consensus of opinion.

It was moved, seconded and carried that the following draft a plan for the new association: Mr. Brown, Mr. Knoll, Mr. Arkema (to represent non-ferrous) and Mr. Pierson (to represent the manufacturers).

CHAIRMAN BROWN: I think that will take care of everything that we can do today. Are there any further suggestions? If not, we'll adjourn.

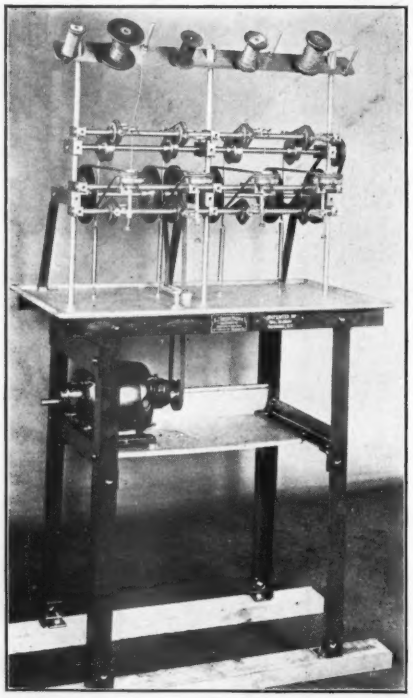
WIRE DRAWING DIAMOND DIES

IN NICKEL STEEL SETTINGS

Manufacturers for Over 35 Years
[Originators of the Steel Setting]

F. KRAUSE & CO., Inc.
250-252-Ogden Ave.
JERSEY CITY, N. J.

The Haddow Die Re-Cutting and Polishing Machine will lower your die re-cutting cost to a fraction of present costs



Recuts dies about ten times faster than by the needle and dust methods and with less diamond dust.

Any unskilled operator can learn to handle it quickly and efficiently.

ONE MONTH'S SHOP PRODUCTION

Total number of dies cut —1047

Total number of hours required—182.5

Average number of dies per hour—5.73

Number of operators—1

With only one man—This machine will do the work now requiring four to six men in less time and at lower cost.

4 HEAD MACHINE—Also Made in 6-Head size (With 2 Heads for Heavier Dies).

Fully Protected by Patents

For Information About Shop Rights

WILLIAM HADDOW
17 Eastern Ave.
Ossining, N. Y.

New Machinery

(*Continued from page 385*)

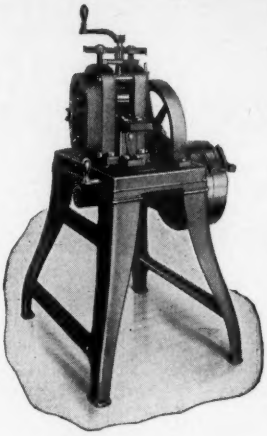
a reset counter, indicating the number of revolutions of the spool. As shown in the illustration this is a simple and very compact machine with a minimum number of parts. These parts however, are rugged and made of the best materials. The arrangement is such that the spool which is being wound is placed at the top on operator's left while the felt drive and This makes for greater convenience for the operator.

Oxweld No. 22 Welding Rod

A new welding rod designed to give increased strength to welds in steel is being placed on the market by the Oxweld Acetylene Co., New York, N. Y. This welding rod has been developed especially to meet the demand for 100% joints in steel pipe having a carbon content of 0.30-0.40%, which has recently come into use. In general appearance, weldability, chemical and physical properties No. 22 S. D. rod is similar to the well-known Oxweld No. 1 High Test Rod, but it will produce welds of even higher tensile strength.

This rod will produce welds having the full strength of the base metal in regular low-carbon steel and steel containing less than 0.30% carbon. It is recommended for full-strength welds in 0.30 to 0.40 carbon steel. Several coupons cut from special-analysis, high-strength plate that had been welded with a single-vee weld using it showed tensile strengths of 100,000 lb. per sq. in.

The action under the welding flame is similar to that of other high test rods, and welders will experience no difficulty in its use. It is a self-fluxing and deoxidizing rod which sparks very little. It forms a fusible slag that rises to the surface where it serves as a protective coating which, although extremely thin, protects the surface of the molten bath from the oxygen of the air and thus prevents oxidation.



Flat Wire Rolling Mill

Used on small sizes of flat wire from rounds or flats.

Tool steel rolls.

6" diameter x 2¼" face.

Roll arbors arranged for water cooling.

Parallel adjustment of upper roll.

Complete with guide table—Either belt or motor drive.

Machinery for the manufacture of rod, wire and cable — Special Machinery.

The Torrington Mfg. Co.
Torrington - Conn, U.S.A.
44 Franklin St.

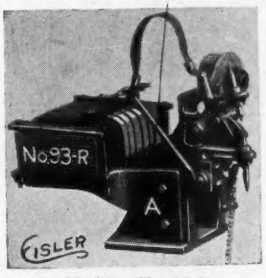
"EISLER ELECTRIC"
Wire Cutting and Straightening Machines

Machine No. 110

Cutting Lengths 1/64" to 4". Wire Sizes .002 to .040. Production 75-125 Per Minute, Depending on Length. Machine is of sturdy and compact construction. Many Types and Styles, for all classes of work. Send for our Wire Cutting Machine Pamphlet.

SPOT WELDER

Suitable For Extremely Light and Fine Welding.



Machine No. 93-R

Eisler Electric Spot Welders are extensively employed in the manufacture of Radio Tubes, Incandescent Lamps, Jewelry, Metal Novelties, Sheet Metal Work, Wire Welding, Etc. Wire or sheet stock as fine as .0005" to 1/16" may be welded or fused together. Made in many sizes and styles.

SEND FOR BULLETINS

Eisler Electric Corporation
Successors to the Eisler Engineering Co., Inc.
758 South Thirteenth St. Newark, N. J.

The only concern SPECIALIZING in the manufacture of

Wire Drawing Soaps

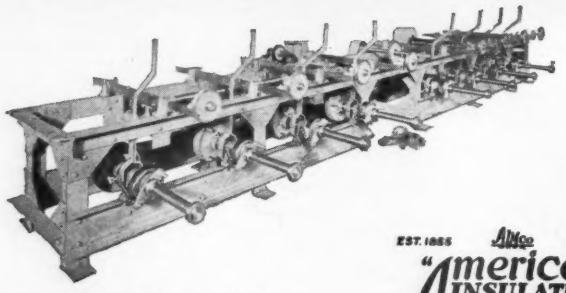
SINCE 1892

THE J. T. ROBERTSON CO., INC.

SYRACUSE, N. Y.

Ask about our special soaps for use with the new alloy dies.

(5)



MULTIPLE PULL-OUT
for Spooling 8 Reels of Wire. With Traverse Motion, Motor Drive, Independent Friction Clutches and Adjustable Tension Slip Friction Drives.

EST. 1855 Alco INC. 1918
"American" INSULATING MACHINERY COMPANY
517 Huntingdon St.,
PHILADELPHIA PENNSYLVANIA U.S.A.

STEELSKIN

REG. U. S. PAT. OFFICE

For High or Low Carbon Wire

WIRE DRAWING SOAPS

Established 22 years.

R. H. MILLER Co., Inc. Homer, N. Y.

WIRE INSULATING, STRANDING AND CABLING MACHINERY

NEW ENGLAND BUTT COMPANY

Office and Factory
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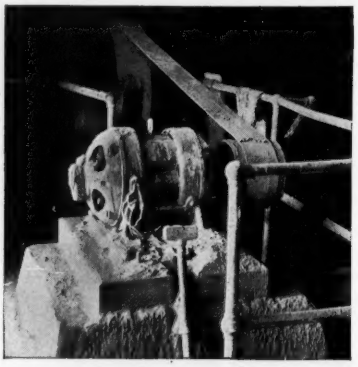
The composition of this rod also prevents the strengthening element, carbon, from burning out during the welding operation. It has the ability to fuse easily into the base metal at both the sides and the bottom of the vee, which is another reason for the remarkable strength of the weld produced. It is available in 3/16 in. and ¼ in. diameters in 36-in. lengths.

Sealed-Sleeve Bearings for Industrial Motors

The distinctive feature of electrical machinery is the presence of insulating materials as an essential element of the design, and in rotating electrical machinery, such as electric motors used in wire mills, bearing design becomes an outstanding problem, largely through the presence and nature of these materials. Were all insulating materials as unaffected by heat and lubricating oil as the metals they insulate, motor bearings would cease to present many of the problems which have made bearing design so difficult.



Motor with Sealed Bearings Installed in Cement Plant.

Unfortunately, many of the most efficient insulating materials may be damaged both by excessive heat and by lubricating oil or grease. Artificial ventilation is commonly employed to prevent the accumulation of excessive heat; but it is just as essential to prevent escape of oil from the bearings onto the windings, and this must be accomplished in spite of the fact that the ventilating air flow tends to draw oil vapors from

(*Please turn to page 398*)

Additional Personal Notes

George W W. Cornman, treasurer and manager of the Service Dept., The Brown Instrument Co., Philadelphia, retired from business early in August. He has been associated with the instrument business for 35 years, formerly being secretary and treasurer, Keystone Elec. Instr. Co. When that organization was observed by The Brown Instrument Co., he became treasurer and a director of the present organization and was the active head of the Service Department, which was built up under his guidance. The Service Department will be in charge of R. C. Kennan, manager, and E. T. Nahill, field supervisor.

—

R. H. Pratt, formerly manager of the cold rolled strip and spring department in the New York office of the American Steel & Wire Co., has been made assistant general manager of sales succeeding **R. L. Foster,** who resigned to become general manager of sales for the Wickwire Spencer Steel Co. Other promotions are **John Graham** to manager of the cold rolled strip and spring department, New York, and **W. H. Jennings,** assistant general manager of sales at Baltimore.

—

A. V. de Forest, formerly research engineer for the American Chain Co., has been appointed consulting engineer for the company. He will be associated also with the newly organized Welding Engineering & Research Co., New York City.

—

Stanley G. Disque has been appointed assistant district sales manager of the Indianapolis district Republic Steel Corp. and R. J. Working, assistant district sales manager of the Cincinnati district.

—

G. W. Garrity, Acme Wire Co., New Haven, has been elected secretary of the Sales Managers' Ass'n.

They tell their friends about

"Bell-Mine"

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LIME

In a letter of Feb. 28, 1930 to Wire & Wire Products, New England High-Carbon Wire Co. says in part:—"We have used this lime for the past few months with extremely satisfactory results and we would not hesitate to recommend it; in fact, have already done so to several of our friends in the wire business".

Write for prices.

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Alloy Makers since 1899

No Rejects

(*Continued from page 390*)

which is a fighter by the name of A. R. Thornton. His genius is organization, not wire, for he can get that made.

The Fan Steel Products Co., at North Chicago, do many things that are positively sacreligeous, while Keshian at the Chase Company in Waterbury, Connecticut, has never learned that it is wrong to bring the student's scholarly delving attitude to industry and he had consequently learned much that is definitely profitable to his company and yet not entirely ethical.

These men and firms and others of similar stamp are and will be responsible for progress in the industry. None of them has the 'I KNOW IT' attitude. Some day each in their turn is going to develop things of value for the industry and themselves and the standpatters are going to pay the bill.

There is a restless undercurrent in the wire industry, like awakening China, shaking off her lethargy at last, a current which is constantly accumulating strength and seems to presage great things ahead. My knowledge of it is gathered from the four corners of the country and I would say the restlessness is quite universal, its greatest potency being developed perhaps throughout Pennsylvania and the middle west. An interesting but not unusual feature of it, is the fact that the largest concerns seem to experience it least.

I believe that more real development will come in wire and its allied lines in the next 10 years than it has previously experienced. All improvement and progress is revolutionary to those who sit tight. As in other revolutions, economic and social there has been a series of constructive steps leading up to the final overthrow of custom. The same will undoubtedly take place in wire. Recount if you will the progress of the past 5 years and then deny if you can, that big things are in the offing.

New Machinery

(*Continued from page 396*)

the bearing housing and deposit them on the insulated surfaces over which it passes.

Special problems are associated almost altogether with bearing housing design. In the majority of motors the type of bearing is immaterial as long as housing is correct. It must support the bearing adequately, it must prevent the entry of any foreign matter and the most difficult requirement of all—it must prevent escape of the oil or grease which it contains for bearing lubrication.

A new housing, in which measures have been taken to prevent oil leakage and to exclude dirt, is shown herewith. The methods have earned for it the name of sealed-sleeve bearing, now widely and favorably known throughout the United States and Canada. Some of its distinctive features are:

An adequate support for the bearing, as at P; embodies features which are effective in complete exclusion of dirt and the retention of all the oil within the housing; washer of soft resilient felt K closely girthing the shaft at C and held in place by the pressed steel bearing cap M. This cap has an over-hanging lip portion L with a small running clearance on the shaft at the outer end. These parts have proved highly efficient in excluding dirt and retaining oil. Parts T and D tightly and rigidly close the inspection hole and the slot for inserting the oil ring respectively. Cored channel O balances the air pressure between chambers of the housing. Pressure relief groove U in the bearing prevents squirting of oil under high pressure through the space between bearing bore and shaft as at V. The dowel screw H does not extend through to exterior of the housing so that oil leakage cannot occur at this point. The threaded engagement of overflow gauge N with the housing is sealed by oil-proof cement.

British Wire Drawing and Wire Working Machinery

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(*Editorial Staff, "The Engineer"*)

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New Element As Wire Raw Material

Scientists have for some years been engaged upon an investigation of the new element Rhenium, a metal which has been obtained from numerous ore samples from many parts of the world. Several hundred grams now exist, either in metallic form or in combination with the other elements. Rhenium, which is known as Element 75, has an atomic weight of 188.7. No ore has yet been discovered in which the Rhenium concentration has exceeded one-thousandth of one per cent. The quantities of Rhenium being produced, however, are constantly increasing. The metal is obtained by the reduction of the sulphide or dioxide by means of oxygen, forming a light black powder, which is worked up by pressure into rods and sheets.

From these are produced, by means of the electric arc, a white, gleaming metal, of remarkable hardness, which can be manufactured into high-grade wire. It possesses a very high melting point between that of osmium and tungsten.

German Cable Plant Planned For South Africa

The German Felten and Guilleaume Co., has applied to the Pretoria Town Council (South Africa) for an industrial site on the western town lands, where it is anxious to build a modern cable plant. It is understood that the equipment of the factory would include a large copper wire drawing plant. The establishment of such a plant would be the means of producing locally a large quantity of electrical wire and cable which at present it is necessary to import from abroad.

The Brown Instrument Co., Philadelphia, Pa., finds the continuing growth of the business has again justified expansion. A contract has just been let for 40,000 sq. ft. of additional floor space. This will be two additional floors on all of the new two-story concrete sections of the plant.

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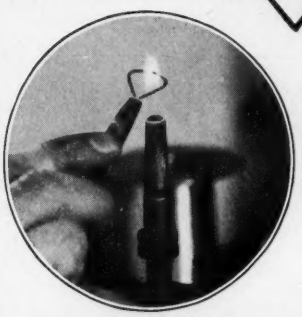

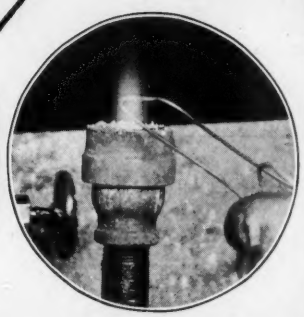

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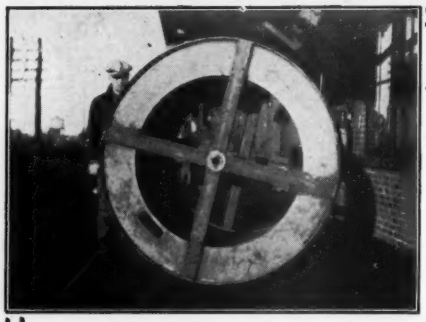

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Factories: Trevoux, France, New York, N. Y.

Fourdrinier Suction Boxes

(*Continued from page 382*)

advantage of to remove the suction boxes and then the perforated covers are planed smooth. The wire cloth is often cleaned by hand while on the machine by a scouring process, as nothing contributes to economical operation of a mill more than systematic cleaning. A material is used to emulsify oils and greases, breaking them up into finely divided floating particles and destroying their adhesive qualities. When acids are used care should be taken that the wires are not eaten and weakened, shortening their life.

Fourdrinier wires can be thoroughly cleaned without the use of acid for scouring. A well-known solution is very effective for removing size, rosin, vegetable matter and other dirt. The showers are turned off and with the wires slowly turning, steam from a perforated pipe is used to blow out the water from the mesh and warm up the wire. The cleaning solution is made by dissolving 1 lb. of a special Oakite material to each gallon of water, 50 gal. of this being sufficient for the average wire. This is heated to boiling temperature and boiled a short while. This solution is distributed uniformly over the wire as it turns, either by means of a shower piper or a roller placed underneath the wire which revolves in a box containing the cleaning solution.

The solution is allowed to remain on the wire for a short while and then the showers are turned on again and the wire thoroughly rinsed. A very desirable feature of this method is that there is no chemical attack on the wire and for this reason the wire is not brightened, the mesh is thoroughly cleaned and the smooth oxide finish of the wire is preserved. As a result, there is no etching or roughening of the surface of the metal. By this method, the life of a wire can be considerably increased. This solution is

made up in the same way for cleaning cylinder wires, and is applied with a wire brush or made up in sufficient volume to fill the trough to a depth sufficient to make contact with wire.

This thorough cleaning will obviate the tendency of the wire to crack. The great despair of machine tenders is the shortening of the life of a wire by cracking in various parts of the wire. These cracks are generally mended by sewing. Their occurence is often mystifying but may generally be attributed to some unusual strain on the wire cloth. The terminal rolls about which the wire revolves may not be adjusted properly and strictly parallel. In many instances the machine, if an old one, in itself may be the cause of breaks, so the virtue of thorough cleansing is obvious.

For light weight papers the vacuum in the suction box varies from 3 to 6 in. while heavy papers may run 13 in. The pressure in pounds is one-half the vacuum point.

British Insulated, A Great Company

(*Continued from page 381*)

or enamel covering, or drawn to size and flattened into strips for armature, field, and transformer windings, while other outlets for the products of the rod mill are overhead conductors for electric railways, trolley wires, telegraph and telephone line wires and copper fuse wires. The cylindrical form is destined for the extrusion department where two hydraulic extruding presses turn out large quantities of sections and strips, busbars, commutator bars, and copper conductors of all shapes.

The extruding shop is complete with hydraulic equipment, reheating furnaces, pickling plant, etc., and the processes of the rod and wire mill are here repeated, with suitable modifications. The copper billets, raised to a bright red heat, are extruded through special steel dies on to a long cast iron bench, being wound on a drum when length requires. Pickling follows

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and then drawing through a few holes to finish, when required. Certain sections, however, are not drawn but extruded to exact size and cut into short lengths. This is an economical and accurate method of producing such articles as controller fingers, and has considerable electrical and mechanical advantage, as compared with foundry production.

Aluminum Wire Produced Like Copper

From an electrical point of view aluminum wire is a serious rival to copper and is produced in much the same way. It is coming into favor more and more each year for high voltage transmission lines with steel towers and long spans. Its light weight is in its favor in such cases, and the strength of an aluminum strand can be raised by reinforcing it with a steel core. This is a practice adopted by the Grid schemes of the Electricity Board.

Reverting to the finished copper wire, this goes from the wire mill to the stranding shop for use in bare strands or paper cables, or to the cotton covering or enamelling departments, or to the Helsby Works for use in rubber or bitumen cables, lighting wires, flexible cords, and so forth. Wire for use in cables with a vulcanite insulation has, of course, to be tinned. This is a simple operation.

The bare wire is mounted on a swift in a tub of slightly acid water to remove any traces of oxide, and thence passes progressively through a cleaning wipe, a bath of flux and the molten tin. On emerging from the bath of tin the wire passes through a die which removes the excess of tin and is then cooled by water or otherwise, wiped once more and taken off on to a reel, being untouched by hand during the process.

In addition to copper and aluminum the wire mill produces wires of various sizes from a material known as copperweld which consists of a tough steel core with a copper covering welded to it. This is used for stay wires, overhead earth

wires, telephone and telegraph wires and other similar purposes where high strength and resistance to corrosion are required. One of the most interesting things about this wire is that the proportions of copper and steel in the rod remain unchanged throughout the wire drawing process.

(To be concluded)

Cost of Congested Aisles

(*Continued from page 379*)

2. When the load-carrying wheels are suspended overhead, the bearings are not affected by time and the movement of the wheels is not retarded by objects on the floor or by uneven and rough floors. On the overhead system the wheels roll on a hard clean rail and one man can easily move a load that would tax the strength of two or three men if the load were on the wire mill buggy.

3. Loads cannot be placed across an aisle or at random about the mill or at any place where they will obstruct the movement of material through the department. The clearance provided on the plans will always be a clearance for the movement of the material so that spaces may be figured more closely.

4. An empty overhead carrier takes up one-tenth of the floor space required for a loaded carwire mill buggy operating on the floor.

5. Last but by no means least in importance the application of overhead machinery facilitates the material handling as distinguished from material transportation. The only advantage that manufacturers derive from the purchase of material-handling machinery is the elimination of material-handling operations and overhead machinery has proven itself to be more effective in this direction than any other type of machinery commonly used in wire mills.

Figure 2 shows one of the most modernly equipped wire mill drawing rooms in the country. Two rails are always re-

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served for the storage of unfinished material and one kept clear for the movement of material through the mill in either direction. The hair pin hooks are suspended at right angles to the through rail, storage tracks are facing the wire-drawing blocks and wire is being drawn from the coil on the end of each hook.

Proper Equipment Saves Handling

It is interesting to note that this company does not handle individual coils of wire or rod from the time the coils are taken off the cooling conveyer until they are stripped off the first wire-drawing block.

The wire is placed in storage in units of eight coils weighing 3,200 lbs., and received from storage in units of the same size. These units (loads) are then carried through the cleaning house and all its operation on overhead machinery, after which they are transferred to the hooks shown above, put through the bakers and carried up to the wire-drawing machines on these hooks. There are many advantages to the overhead method of moving materials in wire mills that are disclosed only after a careful study of the subject as related to the individual problems of each mill. In this article we are considering the advantage of overhead machinery solely from the standpoint of eliminating aisle congestion; its application is often justified on this basis only.

Another department in which aisle congestion affects handling costs badly but as a rule does not affect the manufacturing or machine costs is in the storage of wire or rod.

There is no good reason whatever for the maintenance of aisles in the wareroom or storage building. Where aisles are used, about half of the floor space is taken up with aisles. Another reason for eliminating aisles is the fact that under these conditions rod can be piled not over 6 ft. high because of the danger of the piles falling over.

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Vanderbilt 7895

ANNEALING SALT BATHS
FOR
Steel and Copper Wire
Inquiries Solicited
European Color & Chemical Co., Inc.
WEEHAWKEN, NEW JERSEY

Broden Construction Co.
Wire Mill and Cold Rolling Equipment
10255 Harvard Ave.
CLEVELAND, OHIO

THE WALLACE G. IMHOFF COMPANY
HOT GALVANIZING
Plants Installed Consulting Service
VINELAND, NEW JERSEY

Salesman Wanted—to sell Tungsten Carbide Dies. Must be high-class man, know the wire field and be able to supply exceptional credentials.
Splendid opportunity for right man.
Address in confidence—R. E. BROWN Secy. The Wire Association. 551 Fifth Ave., New York.

Due to a merger a well-known superintendent of heat treating and cold drawn work (member of Wire Association) will be available shortly. Experience covers production of wire, special shapes, churning, and centerless grinding. Exceptional credentials. Inquiries regarding this man will be held in confidence and should be addressed to R. E. Brown, Secretary, Wire Association, 551 5th Ave., N. Y.

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PATENTS
TRADE-MARKS
SERVICE

Without charge or obligation, we will inform you on any questions you may put to us touching on patent, trade-mark and copyright law. You may ask: "Should I protect myself by patent or register under the trade-mark or copyright laws? What kind of a patent should I obtain?" and many other questions that may occur to you. These are vital points to consider and questions will be cheerfully answered.

Evidence of Conception

Before disclosing your invention to anyone send for blank form "EVIDENCE OF CONCEPTION" to be signed and witnessed. As registered patent attorneys we represent hundreds of inventors all over the United States and Canada in the advancement of inventions. The form "Evidence of Conception," sample, instructions relating to obtaining of patents and schedule of fees sent upon request.

Lancaster, Allwine & Rommel
Registered Patent Attorneys
473 OURAY BUILDING
WASHINGTON, D. C.
Originators of forms, "Evidence of Conception."

When overhead machinery is used to save the storage space, piles as high as 30 ft. have been made, and No. 5 rod will not get out of shape when piled this high. With overhead machinery no aisles need be maintained so that the use of overhead machinery will justify itself in any mill in the country. If a new storage building is under consideration, overhead machinery will save enough in the cost of the building to pay for the machinery several times.

Congestion in the Nail Department

In most wire mills the nail department is cluttered with boxes and trucks all of the time so that the transporting of all material should be overhead where congestion cannot occur. Usually the best plan is to adopt large containers for the nails and move these containers over the aisles. This method has many advantages other than eliminating congestion. See Fig. 1.

There is hardly a wire mill in the country that does not use overhead machinery in some form or other today. Those wire mill operators who have not yet investigated the use of overhead machinery for transporting of material through the mill have a surprise in store for them particularly if they make this study with the help of some one or some organization with experience back of them on the subject. There are many new and practical ideas and inventions that should be thoroughly understood and taken advantage of.

Nehring Electrical Works, De Kolb, Ill., have placed contracts for complete equipment for the manufacture of bare copper wire and cable. The plant will have an annual capacity of 50,000,000 lbs. and will be the most modern in existence. The new building will be of ample size to accommodate the installation of a rolling mill later, and is planned with this in view.

BUYERS' GUIDE, Continued

GALVANIZING ENGINEER
W. H. Spowers, Jr., New York, N. Y.

GALVANIZING—Hot
Wallace G. Imhoff Co., Vineland, N. J.

GALVANIZING—Inhibitor
Debevoise-Anderson Co., New York

GAUGES—For Electric Cabling, Insulating Machines
The Comtor Co., Waltham, Mass.

GALVANIZING LADLES, PANS, POTS
Columbiana Boiler Co., Columbiana, O.

GAUGES—For Fine Wire
Federal Products Co., Providence, R. I.

LATHES—Die Reaming
Morgan Construction Co., Worcester, Mass.
Vaughn Machinery Co., Cuyahoga Falls, O.
The Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.

LIME—Pulverized
Amer. Lime & Stone Co., Bellefonte, Pa.

LUBRICANTS—Wire Drawing
R. H. Miller & Co., Homer, N. Y.
J. T. Robertson Co., Syracuse, N. Y.

MACHINE—Die Re-cutting and Polishing
Wm. Haddow, Ossining, N. Y.

MACHINERY—Armoring (Cable, Wire Hose)
American Insulating Mach'y Co., Phila., Pa.
New England Butt Co., Providence, R. I.
Sleeper & Hartley, Inc., Worcester, Mass.
Torrington Mfg. Co., Torrington, Conn.
Watson Machine Co., Paterson, N. J.

MACHINERY—Braiding
Mossberg Pressed Steel Corp., Attleboro, Mass.

MACHINERY—Bundling
Sleeper & Hartley, Inc., Worcester, Mass.
Vaughn Machinery Co., Cuyahoga Falls, O.
Watson Machine Co., Paterson, N. J.

MACHINERY—Cable, Electric
New England Butt Co., Providence, R. I.
Torrington Mfg. Co., Torrington, Conn.
Watson Machine Company, Paterson, N. J.

MACHINERY—Chain Making
Vaughn Machinery Co., Cuyahoga Falls, O.

MACHINERY—Closing
New England Butt Co., Providence, R. I.
Torrington Mfg. Co., Torrington, Conn.
Watson Machine Co., Paterson, N. J.

MACHINERY—Coiling
Broden Const. Co., Cleveland, O.
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Cutting
American Insulating Mach'y Co., Phila., Pa.
Eisler Electric Corp., Newark, N. J.
Hallden Machine Co., Thomaston, Conn.
F. B. Shuster Co., New Haven, Conn.
Sleeper & Hartley, Worcester, Mass.

MACHINERY—Enameling
American Insulating Mach'y Co., Phila., Pa.

MACHINERY—Flat Wire
Sleeper & Hartley, Inc., Worcester, Mass.
Torrington Mfg. Co., Torrington, Conn.

MACHINERY—Forming
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Galvanized Wire
Morgan Construction Co., Worcester, Mass.
Vaughn Machinery Co., Cuyahoga Falls, O.

MACHINERY—Gang Winders
Watson Machine Co., Paterson, N. J.

MACHINERY—Insulating
American Insulating Machinery Co., Phila.
New England Butt Co., Providence, R. I.

MACHINERY—Lock Washer
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Magnet Wire Enameling
American Insulating Mach'y Co., Phila., Pa.
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Measuring Wire
The Comtor Co., Waltham, Mass.
Federal Products Co., Providence, R. I.
New England Butt. Co., Providence, R. I.
Watson Machine Company, Paterson, N. J.

MACHINERY—Nail
Sleeper & Hartley, Inc., Worcester, Mass.
Vaughn Machinery Co., Cuyahoga Falls, O.

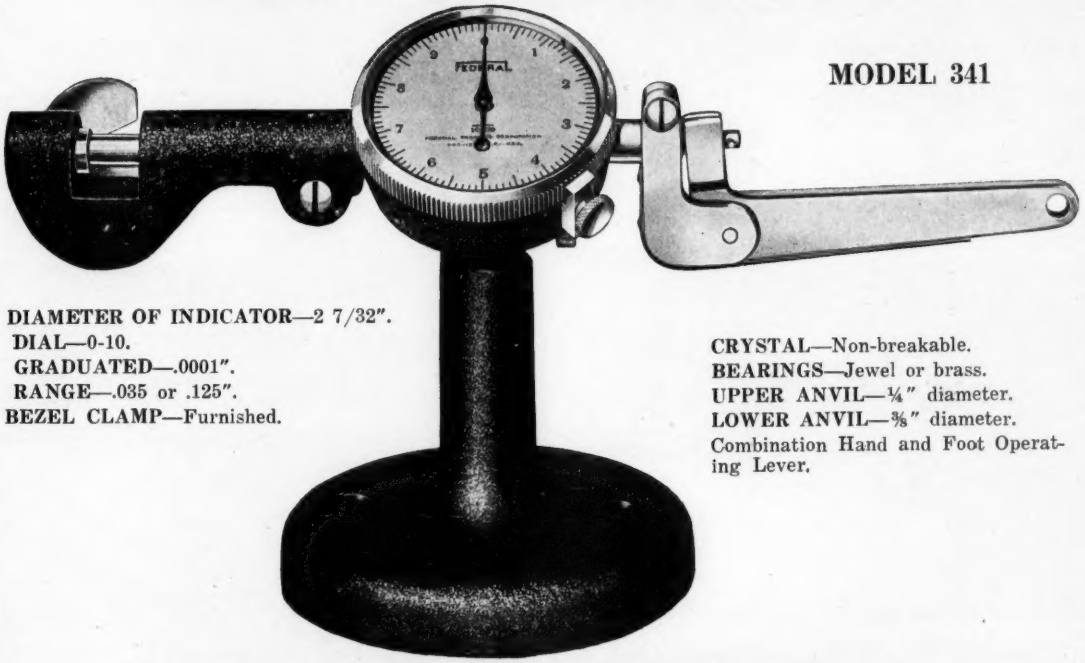
MACHINERY—Panning
American Insulating Machinery Co., Phila.

MACHINERY—Pointing
Morgan Construction Co., Worcester, Mass.
E. J. Scudder Foundry & Machine Co., Trenton, N. J.
Sleeper & Hartley, Inc., Worcester, Mass.
Torrington Mfg. Co., Torrington, Conn.
Vaughn Machinery Co., Cuyahoga Falls, O.
The Waterbury Farrell Foundry & Machine Co., Waterbury, Conn.

MACHINERY—Rivet
The Waterbury Farrell Foundry & Machine Co., Waterbury, Conn.

WIRE TESTING GAUGE

MODEL 341



DIAMETER OF INDICATOR—2 7/32".
DIAL—0-10.
GRADUATED—.0001".
RANGE—.035 or .125".
BEZEL CLAMP—Furnished.

CRYSTAL—Non-breakable.
BEARINGS—Jewel or brass.
UPPER ANVIL—¼" diameter.
LOWER ANVIL—⅜" diameter.
Combination Hand and Foot Operating Lever.

Federal Products Corporation

CHICAGO CLEVELAND PROVIDENCE, R. I. DETROIT NEW YORK

BUYERS' GUIDE, Continued

MACHINERY—Rod
Torrington Mfg. Co., Torrington, Conn.

MACHINERY—Rubber Strip Covering
New England Butt Co., Providence, R. I.

MACHINERY—Screw Wire
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Spooling
American Insulating Machinery Co., Phila.
Torrington Mfg. Co., Torrington, Conn.
Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.

MACHINERY—Spring Making
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Staple
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Straightening
Eisler Electric Corp., Newark, N. J.
Hallden Machine Co., Thomaston, Conn.
F. B. Shuster, New Haven, Conn.
Sleeper & Hartley, Inc., Worcester, Mass.
Torrington Mfg. Co., Torrington, Conn.

MACHINERY—Stranding
American Insulating Mach'y Co., Phila Pa.
New England Butt Co., Providence, R. I.
Sleeper & Hartley, Inc., Worcester, Mass.
Watson Machine Co., Paterson, N. J.

MACHINERY—Swaging
Sleeper & Hartley, Worcester, Mass.
Vaughn Machinery Co., Cuyahoga Falls, O.
Waterbury-Farrell Foundry Machine Co., Waterbury, Conn.

MACHINERY—Taping
Amer. Insulating Mach. Co., Phila., Pa.
New England Butt Co., Providence, R. I.
Watson Machine Company, Paterson, N. J.

MACHINERY—Trolley Wire
Torrington Mfg. Co., Torrington, Conn.
Waterbury Farrel Foundry & Machine Co., Waterbury, Conn.

MACHINERY—Tube
Torrington Mfg. Co., Torrington, Conn.

MACHINERY—Welding
Eisler Electric Corp., Newark, N. J.

MACHINERY—Winding
American Insulating Mach'y Co., Phila., Pa.
Sleeper & Hartley, Inc., Worcester, Mass.

MACHINERY—Wire Drawing
American Insulating Machinery Co., Phila.
Broden Const. Co., Cleveland, Ohio.
Morgan Construction Co., Worcester, Mass.
E. J. Scudder Foundry & Machine Co., Trenton, N. J.
Sleeper & Hartley, Inc., Worcester, Mass.
Torrington Manufacturing Co., Torrington, Conn.
Vaughn Machinery Co., Cuyahoga Falls, O.
Waterbury Farrell Foundry & Machine Co., Waterbury, Conn.

MACHINERY—Wire Rope
New England Butt Co., Providence, R. I.
Watson Machine Company, Paterson, N. J.

PACKING—Metallic Fibre
Hudson Wire Co., Ossining, N. Y.

PATENTS
Lancaster, Allwine & Rommel, Washington, D. C.

POINTERS—Wire
Sleeper & Hartley, Inc., Worcester, Mass.

POTS
Columbiana Boiler Co., Columbiana, O.

PULLERS—Wire
E. J. Scudder Fdry. & Machine Co., Trenton, N. J.
Sleeper & Hartley, Inc., Worcester, Mass.

REEL AND TENSION STAND—
Sleeper & Hartley Inc., Worcester, Mass.

REELS
American Pulley Co., Philadelphia, Pa.
Apco-Mossberg Co., Attleboro, Mass.
R. B. Hayward Co., Chicago, Ill.
Hubbard Spool Co., Chicago, Ill.
Mossberg Pressed Steel Corp., Attleboro, Mass.

REEL CRUTCHES
Watson Machine Co., Paterson, N. J.

SOAPS—Wire Drawing
R. H. Miller Co., Homer, N. Y.
J. T. Robertson Co., Syracuse, N. Y.

SOLDER
Kester Solder Co., Chicago, Ill.

SOLDER—Silver
Handy & Harman, N. Y.

SPOOLS—Wire & Cable
American Pulley Co., Philadelphia, Pa.
Apco-Mossberg Co., Attleboro, Mass.
R. B. Hayward Co., Chicago, Ill.
Hubbard Spool Co., Chicago, Ill.
Mossberg Pressed Steel Corp., Attleboro, Mass.

TRUCKS
Morgan Construction Co., Worcester, Mass.
Vaughn Machinery Co., Cuyahoga Falls, O.

VULCANIZERS
Watson Machine Co., Paterson, N. J.

WIRE—Various Kinds
Hudson Wire Co., Ossining, N. Y.

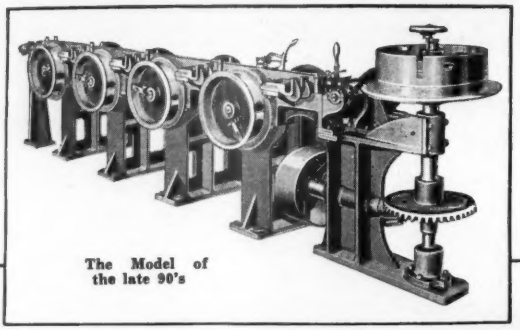
This is a carefully classified index of concerns who specialize in this industry and who advertise regularly in WIRE & WIRE PRODUCTS. Please mention WIRE when writing to these firms.

WATERBURY-FARREL TANDEMS

Three Decades Perfecting Continuous Wire Drawing Machines

We thought the old machines were pretty good in the old days (and they were) but times have changed. Today we offer not a better method nor a new principle, but—a far better machine that meets in eloquent fashion every demand of the present day—

High Speed
Low Operating Cost
Mechanical Efficiency



The Model of the late 90's

5 to 10 Dies—with or without motor.

Finishes wire in coil form or spooled, as preferred.

No. 1 Machine. Forced feed lubrication. Ball Bearings throughout. Starting size, 5/16" copper rod.

The Waterbury Farrel Foundry and Machine Company

Home Office and Works: Cottage Place, Waterbury, Connecticut **Western Sales Office: Cleveland, Ohio**

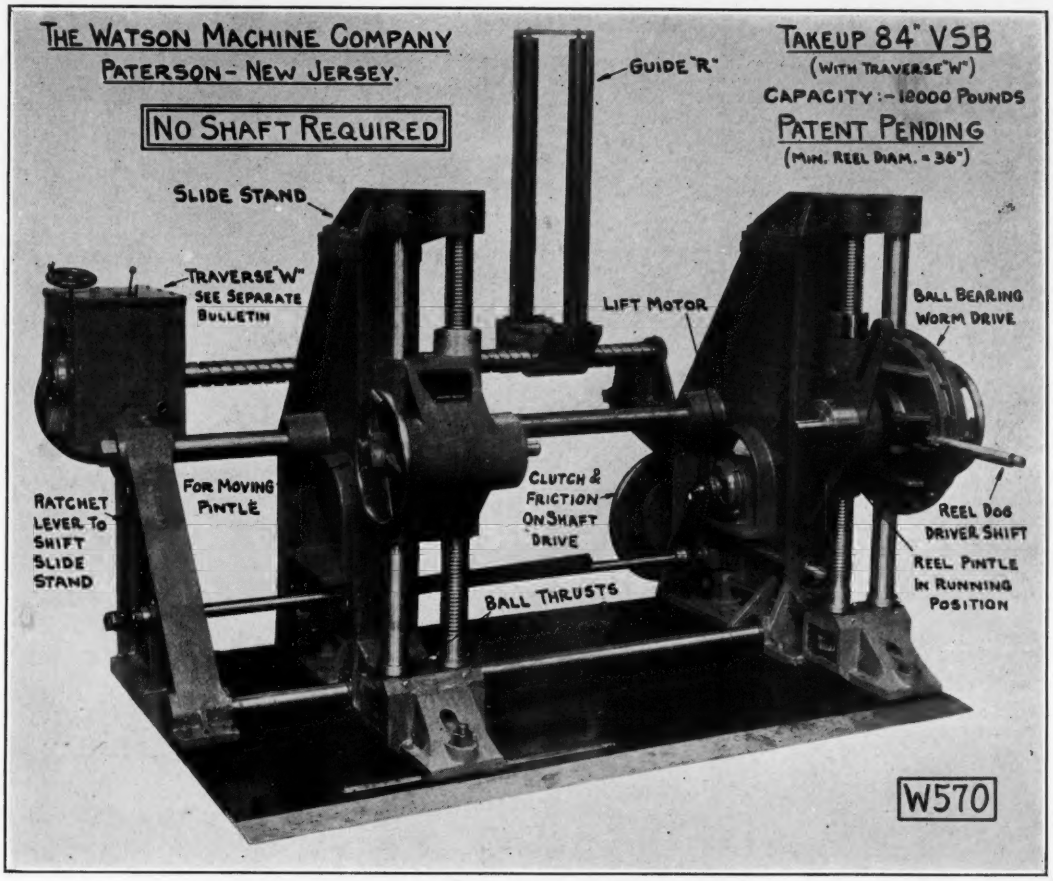
THE WATSON MACHINE COMPANY

ESTABLISHED 1845

PATERSON, NEW JERSEY, U. S. A.

ENGINEERS - FOUNDERS - MACHINISTS

SHAFTLESS TAKEUPS, TYPE "V" *(Patent Pending)*



STANDARD SIZES BUILT

For 60"	Max.	Diam.	Reel	For	Weights	Up	to	4	Tons
84"	"	"	"	"	"	"	"	6	"
96"	"	"	"	"	"	"	"	10	"

The Elimination of Accidents Due to Handling of Reel Shafts is a Point of Considerable Worth.

Reel Entrance and Removal is Easily and Quickly Accomplished by Operator.

Stands are Designed for Heaviest Cable Pulls.

Lift Motor and Control Supplied with Stand.

Width of Stand to suit Maximum Width of Reel.

ELECTRICAL WIRE AND CABLE
WIRE ROPE and CORDAGE MACHINERY

ECHOES *From the* BUFFALO SHOW

This Morgan-Connor Wire Machine ran five days, 16th to 20th, June, 1930, and the total amount of scrap made was nine ounces.

MORGAN CONSTRUCTION CO.,
Worcester, Mass., U. S. A.

Sole licensee for Morgan-Conner Wire Machines in Europe

MALMEDIE & COMPANY
Maschinenfabrik Aktiengesellschaft — Dusseldorf, Germany

MORGAN
WORCESTER

ENGINEERS AND MANUFACTURERS